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THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

J. F. BOOTH, Director

FEBRUARY 1960 Vol. XXX No. 1

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G. P. Boucher, L. E. Drayton and Frank Shefrin

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ANNUAL AND MONTHLY INDEX NUMBERS
Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production[e]
		Total[b]	Field[b]	Animal		Composite[e]	Equipment and Materials[d]	Total	Food	
	1935-39=100							1949=100		1949=100
1913	83.4	....	....	....	....	....	85.4	49.2	44.4	....
1914	85.4	....	....	....	....	85.3	90.2	49.6	46.0	....
1915	91.8	....	....	....	....	91.6	96.9	50.3	46.8	....
1916	109.8	....	....	....	....	100.5	101.7	54.2	51.8	....
1917	148.9	....	....	....	....	140.5	140.7	63.7	66.9	....
1918	166.0	....	....	....	....	160.2	164.1	72.0	76.9	....
1919	174.7	....	....	....	....	167.9	169.1	78.8	82.2	....
1920	203.2	....	....	....	....	186.5	190.1	90.5	94.4	....
1921	143.4	....	....	....	....	152.5	147.4	80.9	72.5	....
1922	126.8	....	....	....	....	134.1	124.6	74.9	61.5	....
1923	127.7	....	....	....	....	130.6	118.3	75.2	61.9	....
1924	129.5	....	....	....	....	131.9	122.3	74.0	60.7	....
1925	133.8	....	....	....	....	131.8	123.2	74.6	63.4	....
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	220.4	166.3	274.5	242.0	259.9	213.0	125.1	122·1	152.6
1959										
Jan	229.7	217.7	156.6	278.7	241.4	258.8	218.2	126.1	122.3	159.5
Feb	230.8	214.8	155.6	274.0	239.3	....	....	125.7	121.2	162.1
Mar	230.8	212.4	155.4	269.5	236.9	....	....	125.5	120.0	161.3
April	231.2	213.7	156.4	271.0	236.2	271.4	220.2	125.4	119.3	165.7
May	231.2	218.8	166.5	271.0	238.4	....	....	125.6	118.5	164.6
June	230.7	221.9	173.1	270.6	239.6	....	....	125.9	119.1	164.9
July	231.0	222.7	172.6	272.8	242.2	....	....	125.9	119.2	163.0
Aug	230.8	221.8	169.0	274.9	241.7	273.5	218.8	126.4	120.5	163.2
Sept	230.8	219.0	161.0	277.0	239.7	....	....	129.1	122.4	167.0
Oct	230.1	215.4	163.0	267.9	236.3	....	....	128.0	124.2	170.8
Nov	230.3	217.1	165.1	269.1	234.2	....	....	128.3	123.8	....
Dec	229.8	215.0	166.8	263.1	....			127.9	122.4	

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1957—July 1958 are final with inclusion of final participation payments for Western Wheat, announced June 5th, 1959. Subsequent indexes are subject to revision.

(c) Exclusive of living costs. Includes farm implements, building materials, gaseline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, rates interest and farm wage rates.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

(e) For a detailed description of concepts, sources and methods see D.B.S. Reference Paper (61-502) Revised *Index of Industrial Production, 1935-57.*

THE ECONOMIC SITUATION

Gross National Product.—The increase in the gross national product which began in early 1958 slowed down markedly in the third quarter of 1959 as a result of the slackening of the rate of advance in total final purchases of goods and services. The seasonally-adjusted increase in the value of the G.N.P. between the second and the third quarter of 1959 was only 0.3 per cent, the smallest quarter-to-quarter rise since the start of the business recovery. Prices having been only very slightly higher, the Dominion Bureau of Statistics estimates that there was no change in the physical volume of production.

The following figures describe the changes in selected expenditure components (seasonally adjusted at annual rates) from the first to the second and from the second to the third quarter of 1959.

	First to second quarter	*Second to third quarter*
	—millions of dollars—	
Personal expenditure	64	188
Government expenditure	124	—164
Residential construction	— 8	— 32
Non-residential construction	40	8
Machinery and equipment	240	96
Exports	312	— 8
Total final purchases	772	88

Population.—Canada's population increased by 366,000 in the first 11 months of 1959 to reach an estimated total of 17,650,000 on December 1 from 17,284,000 at the beginning of the year. The January-November increase was slightly larger than the 354,000 increase in 1958 but considerably smaller than the 1957 record 11-month increase of 516,000 when immigration heavily contributed to population growth.

Industrial Production.—Canada's seasonal-adjusted index of industrial production rose from 167.0 in September to 170.8 in October 1959, as a result of a 3.4 per cent increase in manufacturing which was partly offset by a 1.7 per cent decline in mining.

Consumer Price Index.—Canada's consumer price index dropped from 128.3 to 127.9 from November to December 1959. The decline was due entirely to a drop of 1.1 per cent in the food index; the other four group indexes recorded little or no change. The food index moved from 123.8 to 122.4. The sharpest drop in egg prices in some years accounted for most of the change; grade "A" large eggs dropped from 62.7 cents to 48.3 cents a dozen, the lowest price since March 1950 and the lowest December price since 1944. Imported fruits, orange juice, pork and chicken were also lower. Fresh vegetables, particulary tomatoes and cabbage, were higher.

Farm Cash Income.—Farm cash income from the sale of farm products in the first nine months of 1959 was estimated at $2,027 million, compared with $1,990 million in the first nine months of 1958. This increase is largely attributable to much higher receipts in the first quarter —$641.7 million in 1959 compared with $613.2 million in the first quarter of 1958.

Returns from the sale of livestock and livestock products were estimated at $1,283 million in the first nine months of 1959 and $1,247 million in the corresponding period of 1958. Returns were larger for all livestock and livestock products, except eggs. Receipts from the sale of field crops rose from $716.8 million to $719.6 million. Lower returns from the sale of wheat, oats, potatoes, fruits and vegetables were offset by higher Canadian Wheat Board payments and higher returns from the sale of barley, flaxseed and tobacco.

RELOCATION ADJUSTMENTS OF FARM FAMILIES

D. DYCK and F. LAWRENCE

In 1952 the Department of National Defence announced its decision to establish an army training area near Gagetown, New Brunswick. The decision implied the expropriation of 426 square miles of land and affected 428 resident property owners. Most of these people were engaged in farming or wood operations.

The Rural Sociology Unit of the Economics Division initiated a study in 1956 to gain some understanding of the social and economic impact of expropriation on rural people and the problems involved in their relocation.

This study was especially concerned with the difficulties encountered and the success achieved by 104 farm families that left the Gagetown Army Training Area, New Brunswick, to relocate in other farming areas. The present article is a brief report on this study and it is written in the hope that it may provide some useful guideposts to people concerned, in the future, with expropriation procedures and the relocation of farmers in new farming areas, as well as to the farmers themselves in making decisions about the purchase of new farms.

Characteristics of the People.—The farm operators interviewed averaged 48.2 years of age in 1952, ranging from 21 to 73 years; 53 per cent were under 50 and 47 per cent were 50 years of age or older. Their average age was the same as that of farmers in New Brunswick (48.6) but higher than the average for all farmers in Canada (46.5) in 1951.[1]

The 104 operators included 92 married men, eight bachelors, three widowers and one widow. Eighty-two of these operators had children at home and 21 of the homes included some other relatives—grandparent, aunt, uncle, or spouse of child.

At the time of the expropriation the respondents had lived in the Gagetown area for 40 years, on the average. Fifty-three were on inherited farms, 43 had purchased their farms and seven farmed under some arrangement with their parents. Ninety-seven of the respondents had had farming experience in their childhood; 84 had gained it in the Army Training Area, ten elsewhere in New Brunswick and three had been raised outside the Province.

In contrast to the similarity in terms of farming experience, there was considerable variation in years of schooling. On the average the operators had attended school for 6.8 years but the range was from none to 16. The group under 40 years of age averaged 8.1 years of schooling whereas the older group had had 6.2 years. The wives had attended school for 8.6 years, on the average, and there was little difference between those below or above 40 years of age with respect to school attendance.

Although 47 operators and 51 wives had had some experience in non-farm work, only two operators and 12 wives had some special training. As a result the opportunities in non-farm work for most of the 104 families were limited to the unskilled types of jobs.

None of the members of 22 of the families belonged to a formal organization. Likewise, 33 operators reported no affiliation with a formal group. Thus the channel of a formal group as a means of communication would not have functioned for about one-fifth of the families and one-third of the operators.

Farming in the Camp Gagetown Area, 1952.—Camp Gagetown is located in the south central part of the Province of New Brunswick. The 426 square miles of land expropriated for this establishment include most of the Gagetown, Hampstead, Petersville subdivisions of Queen's County, and parts of Blissville and Burton subdivisions of Sunbury County.

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[1] *Census of Canada,* 1951.

The 104 survey farms averaged 265 acres, ranging from one to 1,090 acres; 6.5 per cent were 100 acres or less in size, 85 per cent had from 101 to 479 acres, and 8.5 per cent had 480 acres or more. Cultivated land averaged 46 acres per farm, forest and wasteland 207 acres and rough pasture 13 acres.[1]

Forage crops, pasture and oats, covering most of the cultivated land, were utilized for the production of livestock and livestock products. Generally, farmers kept enough of each type of livestock to satisfy their own household needs of milk, eggs and meat and also to have some livestock and livestock products for sale. The farm woodlot supplied the farm home with fuel and wood and the farm business with a source of cash income. Leased stumpage and other work off the farm were additional sources of cash revenue for some families.

The average net income[2] of the 104 families, in 1952, ranged from $335 to $9,715 and averaged $2,570 per family. Seventeen families had an income of less than $1,500, 59 had from $1,500 to $2,999 and 28 families had income of $3,000 or more. Non-commercial farmers (17) had an average income of $2,187 per family; 12 per cent of this income was derived from agricultural products, 12 per cent from the farm woodlot, nine per cent from leased stumpage and 67 per cent from other non-farm sources. Commercial farmers had an average income of $2,645 per family; 59 per cent of this income came from the sale of agricultural products, 25 per cent from the farm woodlot, eight per cent from leased stumpage and eight per cent from other non-farm sources.

Ninety-seven farmers sold agricultural products; on the average, income from this source represented 53 per cent of total family income. Ninety-seven derived cash income from their woodlots; this income averaged 23 per cent of total income. Sixty-eight had off-farm sources of income bringing in an average equivalent to 25 per cent of the total.

The 17 small-scale and part-time non-commercial farm operators, as a group, differed from the commercial group of operators as to age, family composition, education and group participation. They were generally younger, were all married and had more children at home than the commercial farmers. They and their wives had had less schooling than the operators and the wives of the operators of commercial farms. They were also less inclined to participate in activities of social, educational, business and religious organizations.

Eighty-eight of the 104 families had no indebtedness in 1952. The average debt of the 16 indebted families amounted to $1,434 per family; 14 of these families had used loan money for farm improvements. On most farms woodlot products were a source of ready cash that obviated the need for credit. Forty-seven farmers expressed a definite dislike or fear of the use of credit.[3]

The Expropriation.—The official announcement of the choice of the Gagetown area for an army training camp was made on August 1, 1952. It was considered that Canada needed a training site on the east coast of the country, and one that would be large enough to train all units in an army. Choice of the Gagetown area for such a camp was made after a thorough study of its suitability for training purposes. Among other factors, its climate, terrain and other geographic features were adjudged to meet the requirements of an all-year training ground. Moreover, the area is located near the all-weather port of St. John, has suitable railroad facilities and good radio reception.

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[1] According to the 1951 Census the average acreage per farm in New Brunswick was 131 acres, with 58.7 per cent occupying 100 acres or less, 39.3 per cent having from 101 to 479 acres, and 2 per cent had 480 acres or more.

[2] Income refers here to net cash income per family and includes farm and off-farm income.

[3] Farmers interviewed in two mixed farming areas of Manitoba in 1952 had a similar attitude towards credit. See Abell, H. C., *"Some Reasons for the Persistence of Small Farms"*, Economics Division, Canada Department of Agriculture, Ottawa, 1956.

To fully inform the people concerned, about the expropriation and the manner in which it was to proceed, an official of the Department of National Defence held a series of meetings throughout the area. At these meetings farmers were informed of the reasons why the area had been chosen for an army camp site and of the manner in which they would be compensated for their displacement from the area. Eighty-seven of the 104 farmers included in our study attended one or more of these meetings.

The prospect of having to move elsewhere had a disturbing effect on these people, especially the older ones. They were faced not only with the loss of old friends and neighbors and established church ties but also with the loss of farms and homes, that in many cases, had been in the family for several generations. Many of them felt that a country the size of Canada should have alternative sites available that would not require the displacement of so many people.

The Department of National Defence found itself in the unhappy position of having to develop evaluation procedures, with little of the required information. However, detailed appraisals of the properties were made by experienced appraisers and based on information and specifications gathered by teams of inspectors who classified and photographed all farm buildings, surveyed all farm land and cruised the timber stands. Most farmers (94) accompanied the inspection team during at least part of the inspection of their farm to satisfy themselves that nothing was overlooked.

After having completed their appraisal, the officials in charge of the expropriation would approach the farmer with an offer for his property. It was the policy of the Department of National Defence to compensate generously in terms of normal market value. Considerable difficulty, however, was experienced in arriving at an approximation of this value since there was inadequate evidence of actual sales of farms in the area. In most cases the initial offer merely provided a basis for negotiations. This procedure led to some recrimination by the expropriated farmers. They saw in it a lack of uniformity or consistency in financial settlements. The possibility of some adjustment was thought desirable but many felt that, following the detailed appraisals, the initial offer should have been made on a more definite and permanent basis. Final settlement, they said, was unduly influenced by the property owner's ability to present his case or hold out for higher settlement.

Farmers, however, did not all speak the same language, in their criticisms of the expropriation procedures. Their comments varied considerably depending mostly on differences in education and economic position. Differences are indeed to be expected, as it is almost impossible for a group of people to arrive at the same opinion concerning the relative values of different properties.

Another complaint frequently voiced, during the study, was that compensation payments for cleared or tillable land was out of line with payments for woodland (including timber). Farmers were generally of the opinion that the high cost of clearing land in the area should have been given more consideration in determining the relative value of these types of land. They also expressed the opinion that some of the cultivated land was among the best types of land in New Brunswick. However, since farmers were generously compensated in terms of normal market value, the issue of relative values tends to lose some significance.

Compensation payments were based on approximate normal market values but farmers received a much larger amount than this value. Their receipts averaged $53 per acre for land, buildings and timber. This compares favorably with the average price of $51 per acre paid for farm land in New Brunswick in 1951,[1] especially when it is considered that much of the agricultural land in the ATA is of low productivity and that there is a larger proportion of woodland in the area than in New Brunswick generally.

The movement of the respondents commenced in 1953. At the time of the study—1956—82 had lived at their new address for three years, 11 for two years and 11 for one year. Eighty-nine of the farm operators had completed settlements with the Department of National Defence before moving to a new area. To facilitate the move from a financial standpoint, the Department made payments available in advance of final settlement to the farmers but none of them made use of this offer.

There was no official curtailment of farm operations in the expropriated area until 1954, but farmers were asked to report any wood cuttings made during 1953 on land which had already been cruised. Moreover, the officials in charge attempted to keep community disruption at a minimum; schools, churches, telephone and hydro facilities were continued as long as practically possible. As a result only 24 of the families reported that their children had lost some time at school during the relocation period.

Aside from the problem of finding a new farm, farmers also had to move their equipment and furniture out of the area. Normally it would probably have been cheaper to replace than move this equipment. But, after a few auctions had been held the prices dropped down to the point where it became a matter of choice between accepting a junk price or moving the goods to the new location. A similar situation would probably not develop in expropriation involving only a few properties.

The experience of the 104 farmers during the transfer of property and movement from the area gave rise to another major complaint. People felt that factors other than real estate were not sufficiently allowed for in computing the rate of compensation payments. Non-farm sources of income and other immovable assets which farmers had to leave behind when moving elsewhere were considered to be inadequately paid for. In essence, this complaint of the respondents raises a doubt as to the adequacy of real estate as a basis for computing compensation payments especially when small farms are expropriated. From the viewpoint of the Department of National Defence, the compensation policy was a generous policy but, unfortunately, many farmers received payments that fell short of the amounts required for relocating. In terms of what farmers could and would not move, the off-farm income sources are in the same category as land. This was recognized in the Gagetown expropriation procedure with respect to grocers and the like; these people were granted an allowance for business disturbance in addition to their real estate. Where expropriation involves the loss of substantial assets or income sources other than real estate to a farmer, a fair settlement should give due consideration to these factors. As a general procedure, however, the computation of compensation payments, on the basis of loss of income, is probably impractical because of the difficulties inherent in the computation of income.

Because of the various complaints regarding compensation one would have expected to see more farmers call on the Exchequer Court of Canada as an arbiter of settlements. However, of the 18 operators who had at one time or another considered appealing their case only two resorted to court proceedings. Exchequer Court settlements are based primarily on current market values and do not admit as evidence the settlements made concerning other lands involved in the same expropriation. Many of the complaints about prices were, however, not about these prices being unfair but rather about their being lower than prices paid to some neighbors. Since compensations were generally above the normal market value there was indeed no ground for an appeal to the Court.

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[1] Dominion Bureau of Statistics data.

Farmers were generally critical of the expropriation proceedings, probably because they regarded such a critical attitude as the proper attitude to display when discussing expropriation matters.

Farming in 1956.—The average size of the resettlement farms was 164 acres, 110 acres smaller than the average for the ATA farms. Cultivated land averaged 36 acres per farm, seven less than on the ATA farms, wood and wasteland 102 acres compared with 207, and rough pasture 23 acres compared with 13 on the expropriated farms.

In terms of crops produced there was little difference between the expropriated and relocation farms. Forage crops, pasture and oats were the main crops. The average number of milk cows per farm was lower on the new farms but 20 farmers were selling fluid milk in 1956 compared with only two in 1952.

The average income of the survey respondents in 1956 was $1,908, $662 less than in 1952;[1] 42 families had incomes of less than $1,500, 48 had from $1,500 to $2,999 and 14 had $3,000 or more. The non-commercial farmers (36) averaged $1,601, 13 per cent of which was derived from the sale of agricultural products, nine per cent from the farm woodlot, eight per cent from leased stumpage, and 69 per cent from other non-farm sources. Commercial farmers (68) had an average income of $2,071, 85 per cent of which was derived from agricultural products, five per cent from the farm woodlot, one per cent from leased stumpage, and nine per cent from other non-farm sources.

Ninety-five farmers reported income from the sale of agricultural products in 1956 and this amounted to 65 per cent of the average income for all farmers. Twenty-nine farmers derived some income from the farm woodlot amounting to six per cent of the average; 50 farmers had income from non-farm sources (leased stumpage and other) and this amounted to 29 per cent of the average for all farmers. The major change, as compared with 1952, concerned the income from the farm woodlot, the number of farmers deriving income from this source having decreased by 47 (from 97), and the proportion of the average income for all farmers obtained from this source from 23 to six per cent. In part, the lower income from woodlots may be attributable to heavier cuttings and greater returns than usual in 1952 since the price of pulpwood was at an all-time high in that year.[2]

Thirty-five of the 104 farmers had some debt at the time of the interviews; these debts averaged $2,543 per family. Twenty-five of these farmers had used their credit to purchase land, machinery or stock, renovate buildings, repair fences, or for general farm improvements. Except for the operators of the larger commercial farms, the operators of the non-commercial units had the largest debts. The average encumbrance of the 16 operators in this category was $2,247 and 13 of these used their credit for the purchase or development of their farms.

Twenty of the farmers operating commercial farms in 1952 were operating non-commercial farms at the time of the survey. Their average age was lower than that for the group as a whole, but eight were 55 years of age or older and for these the expropriation probably was a boost into semi-retirement. In two families the children had left home as a result of the expropriation. Moreover, the opportunity to take on non-farm work and the reluctance to go into debt were probably additional factors influencing the increase in small-scale and part-time farmers.

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[1] Over the same period income for all farmers in New Brunswick declined by 12 per cent according to D.B.S. *Handbook of Agricultural Statistics, Part II, Farm Income 1926-1957,* Reference Paper No. 25.

[2] D.B.S. data.

Compared with 1952, the farming situation of the respondents in 1956 may be summarized as follows:

a) Income was lower, on the average.
b) Farm size was smaller on the average.
c) Fewer farms had woodlots producing for the market, and the lots were generally smaller and less productive.
d) The number of small-scale and part-time farmers had increased.
e) There were more fluid milk shippers (indicating a change in type of farming).

According to the Edwards level of living scale[1] the survey respondents had a higher level of living in 1956 than in 1952. Whereas a quarter of the families had scores below 19 in 1952, only one-seventh was in this category in 1956. The individual scores averaged 21 and ranged from eight to 26 in 1952; they averaged 22 and ranged from 13 to 26 in 1956.

The Relocation Process.—After the expropriation farmers felt compelled to get established on new farms without any delay. Aside from this haste, several factors influenced the speed and success of reestablishment. Only 43 of the 104 farmers had had experience in buying a farm; the others had acquired their ATA property through inheritance. As a group, the displaced farmers were probably not very adaptable to change. Many lacked the type of experience usually associated with adaptability, such as travel and employment outside their community and activity in various types of formal organizations.

In looking for a new farm, the respondents restricted their search primarily to the southwestern part of New Brunswick, that is, to the area surrounding Camp Gagetown. They were familiar with this area and some of them had hoped to find employment in the building of the ATA. They were also well aware that the purchase of a farm not too distant from the ATA would entail the disbursement of less money for displacement purposes.

Fifty-seven farmers had located their new farms without any kind of assistance. The others had been directed to "farms for sale" by listings received from the Colonization Departments of the Canadian Railways and the Department of National Defence and other sources; some help and information were also given by the agricultural representative, the parish priest and bank officials. Most of the farms listed for sale were found to be too high in price or in poor condition. Only three farmers eventually purchased a farm to which they had been directed.

Of the 103 respondents giving information, 13 had visited only the property which they eventually purchased. Ninety farmers looked at two or more farms before deciding on a purchase; 24 of these farmers visited from two to six farms, 25 from seven to 14, and 26 had inspected 15 or more farms. Fifteen said they had visited "quite a few" farms but would not give a more precise estimate.

The average distance the respondents moved from their homes in the ATA was 44 miles. Distances varied from two to 200 miles; 52 farmers located within 40 miles of their former homes, 39 moved 40 to 69 miles and 13 moved 70 miles or more. There was thus a tendency by the respondents to settle within the counties where they originally resided, or in an adjacent county; only five moved beyond these boundaries.

Confined to a relatively small area, the demand for farms by the people involved in the expropriation brought about considerable inflation in farm prices in the areas adjacent to the ATA. According to people familiar with the area, the prices of small farms were more inflated than those of the larger units and the data on prices paid per acre by size of farm indicate that the 17 farmers who bought farms of less than 100 acres in size paid $130 per acre; the 50 farmers who settled on farms of 100 to 199 acres paid $43; the 27 who bought farms of 200 to 299 acres paid $44; and the 10 farmers who purchased farms of 300 acres or more paid $28 per acre, on the average. These average prices are not directly comparable; adjustments would have to be made for differences between groups of farms in the proportions which the different investment components represent of total real estate investment, before the real differences could be determined. However, the difference between the price paid per acre for farms less than 100 acres in size and the other prices exceeds any reasonable allowance which might be made for factors other than inflation.

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[1] Edwards, Florence M., "*A Scale of Rating Socio-Economic Levels in Rural Western Canada*", Dominion Economic Division, University of Alberta, Edmonton, Alberta, 1946.

Support for the view that the prices of the smaller farms were more inflated than those of the larger farms also comes from the fact that there were more bidders for the smaller units. Analysis of the survey data indicates that 54 of the 104 respondents operated farms which produced less than $1,200 worth of agricultural products for sale in 1956. More than half of the respondents were thus in the market for the rather small units, and theoretically, this would tend to increase the price of these farms by comparison with the prices of larger units. Farmers buying the smaller units were therefore at a disadvantage in terms of size of farms as well as the inflation in prices.

The respondents did not generally move far away from their original homes but many of them were nevertheless faced with the problem of adapting themselves to new farming conditions. Few of the new farms had good-income producing woodlots, a major source of cash income in the ATA area. On the other hand, fluid milk was the major income source on about one-fifth of the new farms whereas only two farmers marketed this product in the ATA. There were also differences in soil type, climate and topography.

Price inflation, inexperience in buying farm real estate and differences in farming conditions all resulted in considerable difficulty and inadequacy in farm appraisals. Comments made by the respondents during the interview in 1956 indicate that many of them were aware of errors and oversights they had made in selecting properties. On many of the farms large expenditures were required for repairs to buildings and fences, and for other developmental activities. On the average, the 104 farmers spent about $12 an acre for improvements on their resettlement farms, ranging from $32 an acre on farms less than 100 acres in size to $6 an acre on the larger farms. The higher outlay for development on the smaller farms is another indication of the greater inflation of prices for these units relative to prices of larger farms. Besides being slow and expensive, the task of rebuilding a run-down farm implies low returns from a low-yielding land and the amount of time that has to be spent on operations that do not yield ready income. One thus finds it easy to understand that the lower income realized in 1956 was not a direct result of the expropriation.

Other comments made by the respondents indicate that a major consideration in selecting a farm was the proximity to relatives, friends and old neighbors. Sixty families had relatives or other acquaintances in the community where they located, although only two said this was their only reason for selecting the farm. Thirty-four operators mentioned price of property as a factor, 29 indicated they had considered the general condition of the farm and its suitability for their choice of enterprises, 24 mentioned proximity to various community facilities, 15 had considered the size and condition of buildings, ten the proximity to off-farm work, seven the general location of the farm, and eight merely indicated they had liked the place.

The analysis of the relocation experiences of the former ATA residents indicates that the problems are related to the scale of the expropriation. First, the inflation of farm values in the adjoining areas was the result of the large increase in demand for farms brought about by the people from the expropriated area. This would not occur where only a few farm families are involved. Second, little change in type of farming, soil, topography and markets may be involved for the farmers in expropriations where only a small number are asked to move since they find it easier to settle in the immediate area. Consideration of the problems faced in relocating indicates that the people concerned would have been helped in terms of assistance in searching for and selecting a new farm. Encouragement to farmers to travel further in search of farms might have avoided some of the inflation of farm real estate prices in the areas adjoining the ATA. Moreover, information on what factors or points to check when purchasing a farm would have been of great help to these people.

Suggestions for Minimizing Problems in Relocation.—Respondents were asked "In what way or ways do you think a person like yourself could be helped in relocating if other Canadians must move as you and your neighbors were asked to do"? Some of their answers are listed below along with the frequency with which each suggestion was made.

The points raised by the respondents involve questions of policy regarding expropriation procedures. Nevertheless, as these farmers considered that their experience might benefit others similarly affected—an aspect of the study which appealed to them—this report would be incomplete without an enumeration of their suggestions for minimizing relocation problems. These suggestions may be listed as follows:

1. Provide sufficient funds to cover the farm and home replacement value at current prices, expenses involved in moving and loss of income during the relocation process. Other reasons given for suggesting higher compensation were the loss of established farm business, loss of business such as trucking and loss of employment sources to people such as the hired farm hand (46 mentions).
2. Advice and guidance should be provided to people forced to relocate. Information and advice should be given, preferably on an individual family basis, on matters such as the costs involved in reestablishment, prices of farms available for relocation, whether to sell or move livestock, machinery and household items, and on the specific farming operations which could be carried on before moving. More aid should be given in searching for and selecting a new farm since much time was wasted in looking at worthless and over-priced farms. Advice and guidance should be given continuously until people are able to make a living in their new locations (27 mentions).
3. Prevent inflation of property values outside the expropriated area. Various ways were suggested in which this could be done: *a*) put ceiling price on other people's property, *b*) notify the people concerned before making the expropriation news public, and *c*) buy up the available farms for resale in the adjoining areas before publicizing the expropriation (21 mentions).
4. It is not advisable or possible to help people in relocating; "no one would know what each one of us would want" was the expression used by some of the respondents (10 mentions).
5. Select uninhabited areas rather than established communities for military sites (9 mentions).
6. Give special consideration to the people who are asked to move by supplying transport to move them, buy the agricultural products required in the military establishment from the former residents of the area, employ the people involved in the expropriation to clear the land, act as security guards in the military area, etc. (7 mentions).
7. Provide for individual and collective bargaining by the property owners at the time of determining settlement (7 mentions).

8. Movement from the expropriated area should be organized on a group basis so as to settle farmers on similar types of land and in a similar physical and social environment (3 mentions).

It should be remembered that most of the respondents had moved from the expropriated area about three years before the 1956 study. Although the problems arising from expropriation are separate from the problems of relocation, farmers tended to relate these in that the degree of success attained in relocation seemed to influence farmers' opinions on many aspects of the expropriation. Those who were fairly successful in relocating were less critical of the expropriation than those who were not quite so successful.

The suggestions listed concern three major aspects of the expropriation and relocation processes: 1) compensation payments, 2) advice and guidance, and 3) inflation of farm values. Generally, the compensation payments for the expropriated farms were generous in terms of normal market values. People in the surrounding areas attested to this in that they believed that the former ATA residents were well paid for their properties. In terms of the cost of relocating, however, some of the farmers had insufficient funds and this gave rise to the suggestion that they were not sufficiently compensated for assets other than real estate.

Aside from suggesting a different basis for computing compensation payments, the suggestions generally referred to problems arising primarily from the large scale of the expropriation. Inflation would not be as great if only a small number of families were involved or if the demand for farms were dispersed over a larger area than was the case in the Gagetown incident. Since the suggested methods for preventing inflation would obviously not be feasible, consideration might be given to ways and means of inducing farmers to go farther in search of farms. Obviously, displaced farmers should be financially able to do so. The owners of small properties may not receive sufficient funds for relocating if this involves considerable expense for searching and moving in addition to the price of the new property. As a result their bids for farms in adjacent areas tends to increase the prices of farms available for sale in these areas, and as in the Gagetown incident, many settle on run-down farms because they did not have the funds required for the purchase of better units.

Summary and Conclusions.—The Gagetown expropriation involved the movement of a large number of people. This report is concerned with 104 of the families who farmed both before and after their move from the expropriated area. Although classed as farmers, about two-thirds of the families depended on off-farm sources for about one-quarter of their cash income before the move. About half of them had had experience in buying a farm.

The mass movement of people, sources of income other than farm real estate, and the lack of experience of the operators in buying a farm were important factors in the expropriation and relocation processes. Because they owned little real estate, the compensation received by some of the operators was a small amount for relocating. Together with the apparent desire of the families to settle near old friends and neighbors, and other sociological aspects, the lack of sufficient funds was a factor in the location of the survey respondents in adjoining areas of the ATA. The large increase in demand for farms brought about considerable inflation of farm prices in the area. This enhanced the problem of relocating from a financial standpoint, and also added to the difficulty of appraising farms for sale by the inexperienced buyers. The result was that many farmers paid high prices for small and run-down farms.

The Gagetown expropriation experience raises the question of bases in addition to real estate for computing compensation payments in cases where the farmers concerned depend on various sources for their livelihood. It also suggests the need for more advice and guidance to people in moving from an expropriated area and in the whole process of relocating.

A REPORT OF THE TENTH SESSION OF THE FAO CONFERENCE[1]

The Tenth Session of the Conference of the Food and Agriculture Organization of the United Nations meeting in Rome in November 1959, gave the 76 member-nations an opportunity to re-examine the entire field of FAO's work and to lay down policy perspectives for the future. The Agenda of the Tenth Session was diversified and covered such topics as Food Production in Relation to Population Trends; Agricultural Price Stabilization and Support Measures; Surplus Disposal; Freedom-from-Hunger Campaign; Agrarian Reform; Mediterranean Development Project; Atomic Energy; Activities and Programs of the Organization and Constitutional and Administrative Matters.

In his keynote speech to the Conference, the Director-General Mr. Sen said that despite the continuation of the paradox between surplus production in some countries and hunger in large parts of the world, and despite the threat posed by rapid population growth,

> "this year's Conference opens under more favorable auspices than the last . . . The world economic situation has also improved. The recession which hit the industrialized countries in 1957/58 is now over. The revival in economic activity in the United States, in Western Europe, and generally throughout the developed world, continues."

Since the fortunes of agriculture are determined by the main current of political, social and economic forces, he said, one can find encouragement in this change. Mr. Sen said that the work of FAO, even under the most favorable conditions, can be only that of a catalyst to national efforts. Its responsibility was nevertheless formidable.

The Conference unanimously elected Mr. Richlieu Morris of Liberia as its Chairman. This was the first time that a representative of the African Continent presided over the Conference. The Conference approved a budget of $18,451,000 and a program of work for the next biennium, 1960/61. This was a 10 per cent increase over the 1958/59 budget. It passed 97 resolutions. It elected a new Council, of which Canada is a member; and reappointed B. R. Sen of India for a four-year term as Director-General. Membership was granted to the newly formed Republic of Guinea, and associate membership to eight African countries that will be attaining independence shortly and to Cyprus.

Many of the country delegations were headed by Ministers of Agriculture. The Canadian delegation was headed by the Minister of Agriculture, the Hon. D. S. Harkness. Dr. J. F. Booth, the Director of the Economics Division, Dept. of Agriculture, was the Alternate Delegate. Other departments represented on the Canadian Delegation included Fisheries, Northern Affairs (Forestry), Health and Welfare (Nutrition), Trade and Commerce, and External Affairs. Dr. Booth was elected as one of the Vice-Chairmen of Commission I which dealt with program trends and policy questions in food and agriculture, and Dr. A. L. Pritchard of the Canadian Department of Fisheries was appointed chairman of the Technical Committee on Fisheries.

The World Food and Agricultural Situation.—The Conference had before it documentation showing that world agricultural production in 1959 increased slightly over that of 1958 and is nearly 30 per cent above the 1948-52 average. Although there has been progress the Conference again emphasized that, in spite of the continued existence of surplus stocks, in the long run, the twin problems of rural poverty and inadequate food supplies in less-developed countries could be overcome only by building up their own agriculture and by a balanced development of their economies.

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[1] By Frank Shefrin. Secretary, Canadian Interdepartmental FAO Committee, and a member of the Canadian Delegation.

Many of the less-developed countries described to the Conference the programs they were undertaking to ensure a rapid expansion of their agricultural production. Most laid increased stress on the need to create a favorable economic and social climate for agricultural development and to remove institutional obstacles to the adoption of technical improvements, especially through land reform measures, accompanied by improvements, often on a co-operative basis, in marketing, credit facilities and extension, and through the development of other basic services. Greater attention was also being paid to the diversification of agricultural production, both to lessen dependence on a narrow range of export products and, through the increased production of protective foods, to improve the quality of the diet.

However, the increase in world food production recently has not been as great as the increase in population numbers. This average general increase has been only about 0.5 per cent above the average population growth of 1.6 per cent, in contrast to the margin of some 1.5 per cent that had been reached in the earlier part of the postwar period. The rate, both of population growth and of production increase, had naturally varied sharply from country to country. Examples brought to the attention of the Conference included India, where population was increasing by 1.9 per cent a year and the expansion of production had been stepped up from an annual average of 2.8 per cent under the First Five-Year Plan to 3.9 per cent during the first three years of the second plan; Chile, where the rates were estimated as 2.5 per cent for population and 1.7 per cent for production; and Pakistan, whose food production had recently shown little increase in the face of an annual population growth of 1.6 per cent. In several Far Eastern countries and in parts of Latin America and Africa, the increase in production had recently fallen behind or was barely keeping pace with the accelerating growth of population.

The difficulty of ensuring a sufficiently rapid increase in food production was further emphasized by the absolute level of population increases in some countries. In India, for instance, an annual rate of only one per cent would mean an additional four million mouths to feed. In many countries, the density of the rural population was already extremely high; further possibilities for the extension of the cultivated area were often very limited and the expansion of their food production would soon depend entirely upon higher yields. In those countries the development of non-agricultural employment was particularly urgent.

Professor Arnold Toynbee, addressing the Conference as the first MacDougall Memorial Lecturer, referred to the population-food production question. He said sooner or later food production will reach its limit.

> "If population was still increasing, famine alone would execute the role that had been played in the past by famine, pestilence and war combined. If mankind is now going to save itself from the casualties formerly inflicted upon it by pestilence and war it is going to bring on itself the new problem of an inordinate increase in population. Our efforts to reduce the death rate must be paralleled by conscious efforts to keep the birth rate under control. For the resources of this planet, even if scientifically administered and developed and husbanded for the benefit of the whole human family, will not suffice forever to feed a population that is increasing ad infinitum. . . .
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> "What matters, surely, is not that the surface of this planet should hold, say, four thousand million instead of three thousand million living human beings; what matters is that living human beings, whatever their number, shall develop the highest capacities of their nature; and, if this is the true end of Man, what we should aim at is the optimum size of population for this purpose in the economic and social circumstances of each successive generation."

Mr. B. R. Sen, in his keynote speech prepared for delivery to the Conference immediately after Prof. Toynbee's address, said that FAO must concentrate on trying to promote human welfare by increasing the productivity of agriculture.

> "Although in theory, as Professor Toynbee has said, there may be an ultimate limit to the development of the physical resources of this planet, we, in FAO, must work in the hope that, in fact, this limit, in relation to world population, will never be reached, or, at least, that the combined contributions of science, technology and universal education will push this limit to a very distant future."

Mr. Sen said that, ever since Malthus wrote his famous treatise, the subject of over-population has been the concern of biologists, sociologists and economists. Every generation had produced its optimists and its pessimists.

> "We, in FAO, however, must concentrate on the responsibilities set out in our Charter and try to promote human welfare by increasing the productivity of agriculture."

The Conference emphasized that existing knowledge of agricultural resources, of the pattern of demand and of population trends, is not sufficient for a prediction with any certainty of the longer-term course of food production in relation to the growth of population. The recent acceleration in the rate of population growth had resulted mainly from lower death rates, especially among young children, following improvements in medical services and in nutrition, and there appeared to have been little change in birth rates so far. Some countries, notably in the Far East, had recently adopted family planning policies, but it would be a long time before their effects were apparent. There was evidence that, with rising levels of living, the coefficient of fertility tended to decline. The various factors influencing this tendency required much further study.

On the production side of the equation, knowledge of the world's agricultural resources was still far from complete. Existing technical knowledge was as yet being utilized to only a small degree in the world's agricultural production. Moreover, recent developments in research suggested that agricultural technology was still only on the threshold of the achievement of its full possibilities.

A high rate of population increase was, however, bound to continue for many years to come, and the Conference stressed that there could be no slackening in efforts to remove the barriers to the fuller application of existing technical knowledge in the less-developed countries and to improve their purchasing power so that they could increasingly utilize the abundant production of more-advanced countries for the better nutrition of their populations. The immediate problem of providing sufficient food was itself immense and challenging. Its solution could not safely be delayed much longer, and should not be jeopardized by inadequately based hopes or fears about the more remote future.

The Commodity Situation.—The Conference in its review of the world agricultural commodity marketing situation and problems accepted the salient features as outlined by the Committee on Commodity Problems:

(1) the persistence of surpluses of some major staple commodities (wheat is of especial interest to Canada) and sudden changes in the supply situation of some others (e.g. skim milk powder);

(2) the unfavorable trends in the terms of trade of agricultural exporting countries;

(3) the growing need for adjustments of national agricultural policies (of especial interest are price support and stabilization measures);

(4) the growing trend in recent years towards regional arrangements [two of the better known examples are the European Economic Community (The Six) and the European Free Trade Area (The Seven)].

The problem areas that are outlined above do not lend themselves to simple solutions. In the areas of surplus and national policies the member countries through the FAO have made a move in the direction of meeting the challenge. In the case of surpluses the FAO has made a number of proposals[1] ranging from selective production to the Principles of Surplus Disposal. The Principles in effect state that countries faced with the need to dispose of their surpluses should give priority to action resulting in increased consumption and should take measures that will minimize or avoid any impact of this disposal on regular commercial marketings. Forty member nations of the FAO have indicated that they will take into consideration these Principles when participating in disposal activity.

The Conference noted that these FAO Principles of Surplus Disposal, as originally adopted in 1954, had come to be more and more widely known, and were being frequently involved in both bilateral and multilateral considerations between governments.

Suggestions were put forward in the course of the Conference Session for arrangements designed to facilitate the establishment of reserves and the coordination of surplus disposal actions for this and related purposes.

The Hon. D. S. Harkness, in his address to the Plenary Session of the Conference, when dealing with the problem of surpluses, said:

> "I should now like to return to the broad issues that face us at the Conference. In the world food situation, shortages are one side of the coin. The other side is surpluses. Inability to market an abundance of food was a nightmare of the economically developed countries during the inter-war years. The word 'surpluses', as someone said, sank deep into the consciousness of farmers. Surpluses are with us again. But because the governments of some countries have been able to assist their farmers and are able to hold large stocks, there have been no chaotic conditions in marketing. There have, however, been difficulties. Assistance by governments in the manner indicated has been useful and necessary. But the real answer is, of course, an enlarged effective demand, equal to production. This is a long term approach and the only sensible approach. The world does not produce too much food. The problem is to make it available in the places where it is needed. In the meantime, the challenge before us is the liquidation of regional surpluses in a manner that will benefit the needy and not harm the producers of any country.
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> "FAO over the past fifteen years, has sought ways and means of overcoming the threats of shortages, surpluses and instability. There have been proposals for a world food bank, food board, an international commodity clearing house, an emergency famine reserve and a world food reserve. Although for various reasons none of these proopsals has been accepted as outlined, their examination has resulted in action by FAO which has had an important impact on these problems. . . .
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> "In reviewing the problem of surpluses, the Ninth Session of the FAO Conference asked the Washington Sub-Committee to review the adequacy of the principles of surplus disposal in the light of the current situation. The report of the Sub-Committee finds little fault with the

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[1] For more details see the report entitled "FAO and the Surplus Problem" in "Agriculture Abroad," October 1959, published by the Economics Division, Department of Agriculture, Ottawa.

> principles. Nor do we. The principles have served us well. It is extremely difficult to dispose of surpluses without injury to commercial trade. But the increased observance of the principles and the opportunity for more frequent consultations between exporters have gone a long way towards minimizing the dangers. . . .
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> "In his opening statement, the Director-General—when speaking of surpluses—posed the question which has also been uppermost in my mind, whether more searching thinking cannot be done to meet the challenge of surpluses and hunger continuing side by side. Perhaps, as a beginning, it would be useful to appraise carefully the actions that have developed out of previous attempts in this field. We might consider starting from where we now stand, by endeavouring to coordinate bilateral agreement and to encourage and assist multi-lateral action whenever possible. . . .
>
> "Joint international action need not necessarily mean a loss of identity of assistance provided by individual countries. National programs could continue to be controlled in accordance with individual national legislation and existing international agreements, having regard for FAO Principles of Surplus Disposal. An important need in this connection would be for a clearing house for information, not only on existing stock and disposal programs, but also on current and future food requirements of countries and regions and on national agricultural policy. This would bring the position of countries in need of food to the attention of those possessing surpluses and facilitate action programs. These and probably other functions might fall within the range of activities of an organization which would first hold a watching brief on the world situation; second, collate information, and third, facilitate action whenever desirable and feasible." . . .

The delegate for India participating in the same discussion said that help in time of need was welcome but that "It is equally the responsibility of the surplus countries to take preventative action to avoid conditions of scarcity." He advocated an experiment in the form of a world food bank, working out a practical scheme of holding food deposits at places where they could produce immediate results.

The question was raised at the Conference whether the Guidelines adopted by the newly formed Wheat Utilization Committee[1] were mere projections of the FAO Principles for Surplus Disposal or whether there had been a shift of emphasis. It was pointed out that the Wheat Utilization Committee in practice was giving consideration to means of increasing consumption and also to the connection between wheat surpluses and economic development.

Agricultural Stabilization and Support Measures.—The Conference emphasized the need for adjusting national agricultural policies in such a way as to promote a better balance between supply and demand in the international markets. The Dutch delegate, for example, spoke of the consequences of national agricultural policies in the international field, and said that his country's export of agricultural products was hampered in its further development by measures taken elsewhere. There was a tendency, as seen in measures taken to meet marketing problems and falling prices, to treat these problems as temporary phenomena. There was too little emphasis on the need to adapt these measures to the rapidly developing changes in the national economy.

The Hon. D. S. Harkness in his address dealt with this issue. He said

> "Consideration must also be given to those conditions which give rise to surpluses. Governments should look at their national policies

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[1] Members of this committee include the United States, Argentina, Australia, Canada, France and the FAO as an observer-adviser. The establishment of this Committee was one of the recommendations that came out of the Food for Peace Conference sponsored by the United States.

> to determine to what extent they may have contributed to the present surplus position. In our own countries we are all committed to protecting and supporting the incomes of farm communities and these policies have, in some cases, led to excessive protectionism. Canada has on occasion found it necessary to adopt some measures to assist her agricultural industries, but efforts have been made to avoid unreasonable, and excessive protectionist policy. We have attempted to be flexible, and where and when the method of support has led to the development of surpluses we have modified our program, for example, on skim milk powder, eggs and hogs.
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> "We are impressed with the report of the Expert Panel on Agricultural Price Stabilization and Support Policies which was established at the request of the Ninth Session of the Conference. We hope that this Conference will be able to give the report the full attention it merits. The recommendations concerning non-price measures and self-help action by farmers appealed to us particularly, but we would also like to see careful consideration given to the section on price support levels, particularly the question of limiting the spread between domestic support prices and international prices. I hope that at this Conference we can arrive at a considerable measure of unanimity of opinion on the action underlying the use of support measures and that these actions would result in a minimum of injury to producers in other countries. I know that we cannot run until we have learned to walk, but there are many countries that can now afford to modify their support program in such a way as not to harm their farmers and at the same time offer greater opportunities to increase international trade." . . .

The Conference devoted much attention to the report of the Expert Panel on Agricultural Price Stabilization and Support Policies. This Panel which met in April 1959 was chaired by the Canadian representative, A. H. Turner. The report sets out Guiding Principles to be taken into account by governments in establishing or reviewing their agricultural policies and, in some of the Principles, reference is made to the need to avoid the accumulation of burdensome surpluses. The Conference recognized the difficulties of the Panel of resolving divergent viewpoints and taking into account a wide range of economic and social conditions. The analytical part of the Panel's report was generally commended, but there was some disagreement at the Conference in respect of the Principles: on the whole there was a good discussion, and it was agreed that there was scope for further improvement and refinement. The Committee on Commodity Problems is to make further examination and revisions of the Principles. It was considered that in revising the principles, full account should be taken of the findings of other international organizations working in the same field, in particular GATT (General Agreement on Tariffs and Trade) where country consultations on agricultural policies are now underway. The report is to be ready for the 1961 Session of the FAO Conference.

Agrarian Reform.—Several of the countries present at the Conference had only recently enacted legislative measures affecting the holding of land. As a result there was a lengthy discussion. The Conference dealt at length with the several phases of agrarian reform, stressing the importance of thorough planning, adequate land distribution and proper implementation of the program. It was generally recognized that it was not agrarian reform legislation, but the implementation of land reform programs, which involved serious technical implications. The techniques and procedures adopted for land acquisition, land distribution, and for raising the productivity of the distributed area, were the decisive factors which determined the success or failure of a scheme. It was brought out at the Conference that measures of land reform must take into account the need for maintaining and improving the level of agricultural production by instituting adequate technical and financial facilities for the owners and operators of the new farming units if such measures were not to be followed by social unrest and loss of confidence of the people in agrarian reform itself.

Resolutions for the establishment of regional institutes on land reform in Latin America and South East Asia were approved—for dealing on a continuing basis with the problems of land tenure and land use in the region, with the object of advising the governments on the necessary changes in their agrarian structures.

Mediterranean Development Project.—This project was reviewed by the Conference. The project covers all the countries bordering the Mediterranean (except Albania and Northern Italy), together with Portugal, Jordan and Iraq, which are included because they form part of the same natural area. The unity of the region derives from the broad similarity of climatic and soil conditions and the existence of acute problems of economic development with many common characteristics.

It is of interest to note the objectives of the project as outlined in the 1957 Conference. In accordance with the Conference discussions emphasinz the need for a broad and bold attack on the entire problem of Mediterranean agriculture and forestry, the basic aim of the project was defined as follows: to accelerate the restoration and development of the land and water resources of the region for agriculture, grazing and forestry purposes and thus contribute to its economic and social advancement by formulating balanced action proposals. These proposals should be primarily designed:

(*a*) To protect the soils and crops against erosion and similar losses and to reclaim through proper measures lands now wasted and unproductive:

(*b*) To raise productivity in agriculture and forestry in order to achieve increased supplies in line with the requirements of the country's inhabitants:

(*c*) To provide employment and achieve social improvements as outlined in the interim report.

The over-all report issued in 1959 is focussed essentially on three aspects: a general analysis of the problem of accelerated development of land and water resources in the Mediterranean region and its economic, technical and social implications; formulation of appropriate policies and programs for the next 20 years and specific action recommendations of major importance at the national level; recommendations for international, regional or sub-regional action. In conformity with the conference resolution, it is based on the findings of the country studies supplemented by special research as required.

The report stressed there was urgent need in the region to reverse an age-old tradition of deforestation and soil erosion. Demographic pressure on land of limited productivity, especially in a semi-arid climate, was likely to lead to a serious deterioration of the situation. To co-ordinate development of all sectors of the economy was a prerequisite for any rise in standards of living from their present low levels. Despite obvious differences in conditions between countries, there were many problems which were of concern to all, and this justified a regional approach. The analysis brought out several types of projects which might usefully be undertaken jointly by groups of countries.

It was generally recognized that the burden of economic development is great. The emphasis of the report on the need for extraordinary efforts by each of the countries concerned was accepted by all. It was considered necessary to secure an adequate administrative structure, well-trained manpower and very heavy investment; otherwise with the rapid growth of population the countries would be exposed to the risk of severe setbacks in their standards of living.

Such investment would have to include forestry, which should be considered as a public works program designed to promote soil conservation and to absorb surplus rural populations, especially from mountain areas.

Although most of the effort was to come from within the countries, external aid will be nevertheless crucial. Several delegates expressed the readiness of their countries to extend technical or financial assistance for development programs in Mediterranean countries.

The debate on the Mediterranean project included statements by a large number of delegations. The interventions of the countries which are subjects of the report were led by the Foreign Minister of Turkey.

Requests for technical assistance for the coming year have already been affected by the country studies; Turkey has asked assistance from the United Nations Special Fund for the establishment of a pilot project, Spain was already engaged in development in the Badajoz area, and Tunisia and other countries are considering setting up new pilot schemes.

The Conference passed a resolution which

> "Invites the Director-General to organize from early 1960 onward intergovernmental consultations using the Over-All Report and Country Programs as a basis and keeping in mind the sub-regions defined in the project. The principal purpose of such consultations would be to frame specific proposals for national and international action programs to be undertaken forthwith, and
>
> "Invites the Director-General to explore the possibilities of initiating similar projects designed to accelerate the integrated development of agriculture and forestry with due regard to the economic and social implications wherever he believes that such an undertaking would be of benefit to the countries or regions concerned."

Freedom-from-Hunger Campaign.—The Director-General of the FAO proposed a campaign to focus public attention on a world-wide scale upon the continuing problem of hunger, and to mobilize national and international effort towards its solution. The campaign will be a continuing activity and is to receive Conference attention at its sessions in 1961, 1963 and 1965. A World Food Congress was contemplated for 1963, in close association with the 12th Session of the Conference.

The Campaign would consider not only ways of increasing agricultural production and income and of raising buying power for food, but also would recognize the need for industrial development so as to increase purchasing power and ability to buy food, especially in the less developed countries. The improvement of nutrition, also, would cover not only the problem of providing more and better food, but the social implications of better nutrition on the position of various groups, such as farmers and fishermen. Besides the fundamental efforts of national governments themselves, active co-operation would be needed from the UN and its Specialized Agencies and from all citizens' groups devoted to humanitarian ideals. The Campaign, as visualized by the Director-General, would thus serve to promote a climate of opinion throughout the world in which the problems of hunger and want would be faced realistically, their causes analyzed objectively, and would apply boldly and courageously appropriate remedies.

As presented to the Conference, the proposed Campaign covers four categories of work: (1) information and education; (2) research; (3) national action programs; and (4) FAO guidance and technical assistance to bilateral programs, when asked for.

The general line set forth by the Director-General for the organization of the Campaign was generally supported. This includes an Advisory Campaign Committee of Governments, an Advisory Conference of Co-operating non-Governmental Organizations, and appropriate national bodies in each country.

Great emphasis was placed by practically all speakers on the importance of the action to be taken outside the FAO if the Campaign is to fulfil its aims. National governments themselves will need to do a great part of the work, especially in underdeveloped countries where not only will action programs be developed and carried through, but where strong efforts will be needed to improve the institutional framework for agricultural and industrial development, and to encourage and attain higher levels of savings and investment from domestic sources.

Expansion of Action in Atomic Energy Field.—The 1960-61 program in the atomic-energy field envisages new activities in Asia, Latin America, the Near East and Africa. In the past they had been confined mainly to Europe. Among activities proposed are those relating to international co-operation in research on the use of irradiation for the preservation of foods and studies on the agricultural aspects of radio-active contamination, as well as assistance in the provision of technical specialists in the field.

At the same time, FAO would continue to function as a co-ordinating center for the collection and dissemination of scientific and technical information in the field of atomic energy, and of the possible contribution of atomic energy to the progress of agriculture and related industries.

The Conference ratified an agreement between FAO and the United Nations International Atomic Energy Agency which affords the official basis for co-operation between the two.

North American Forestry Commission.—Delegates from the United States, Canada and Mexico agreed to the formation of an FAO North American Forestry Commission. This is the fifth regional forestry commission so far established by FAO.

World Seed Campaign.—A resolution approving FAO's project for a world campaign for the use of better seeds was approved by the Conference. The resolution, put forward by Canada, designates 1961 as World Seed Year. Seventy countries had announced their intention of participating in the campaign, and 59 of them had already begun concrete action programs on the national level. The programs undertaken and envisaged under the campaign encompass three main sectors: improvement of cultivated plants; production, certification and distribution of high-quality seeds; and educative extension and publicity activities.

Canada had in 1959 through the Colombo Plan provided training fellowships. Eleven seed specialists arrived in Ottawa in September, 1959 from Burma, India, Indonesia, Japan, Nepal, Pakistan (2 from East and 2 from West), Philippines and Thailand.

The course covered a period of about three months and included studies of government organization and facilities, management of production and sale at the grower level, and distribution by the seed trade. Two months were spent in the field visiting farmer-growers, co-operative seed cleaning plants, and merchandising and distribution agencies. One month was spent in the seed control laboratories of the Federal Department of Agriculture.

The project had the support of the seed industry and the Canadian Seed Growers' Association, and the Canadian Seed Trade Association co-operated with federal and provincial officials and universities in putting on a suitable program. The Department of Agriculture acted as the liaison body with FAO in respect to the Campaign.

Program of Work 1960/61.—FAO has about 1,500 staff members assigned to Headquarters and Regional Offices. Over 50 nationalities are represented on the staff. The Organization has 10 technical divisions covering the following: Land and Water Development; Plant Production and Protection; Animal Production and Health; Rural Institutions and Services; Forestry and Forest Products;

Fisheries; Statistics; Economic Analysis; Commodities; and Nutrition. The proposed 1960/61 program was reviewed by a number of technical committees appointed by the Conference. These committees passed judgment, and offered suggestions.

In addition, the FAO administers currently a Technical Assistance Program with about 435 technical assistance experts assigned to field projects in nearly 65 countries or political sub-divisions. The Conference took the occasion of the Tenth Anniversary of the Expanded Technical Assistance Program to express strong support for the Program. It was noted that as of September 1959, 1,773 FAO experts recruited, during the decade, from over 40 countries, had served in the field; that some 1,600 fellowships had been awarded; that about 100 training centers had been organized; and that the number of countries and territories served by FAO had grown from 48 in 1953 to 68 in 1960.

New activities have come out of the recently established United Nations Special Fund. The Fund started operating early in 1959 by establishing criteria for selecting projects and the procedures to be followed. One of the important criteria is the concentration on relatively large projects which inter alia distinguishes the Special Fund operations from those of the Expanded Technical Assistance Program. The Expanded Technical Assistance Program has spread its resources over a large number of projects and, through the system of country programming, over a wide geographical area. The Special Fund, by contrast, concentrates on a more limited number of projects involving relatively heavier individual budgetary commitments. It is also bound by its terms of reference to seek substantial counterpart contributions by recipient governments. Another important difference is that, while under the ETAP the projects are budgeted for on an annual basis, the Special Fund projects are approved with budgetary provision for their entire duration, which in practically all cases is more than one year.

The Special Fund is also giving due consideration to the technical organizational and financial problems likely to be encountered in executing proposed projects. These include the arrangements to be made with recipient governments regarding the execution of the projects and to counterpart contributions and local costs. The FAO so far has been asked to administer five major projects: these are, Ghana (Survey of Volta River Flood Plain), Greece (Pilot Project in Groundwater Development), Israel (Pilot Project in Watershed Management), UAR (Egyptian Region), (Pilot Project for Drainage of Irrigated Land) and (Soil Survey from Aerial Photographs). It is anticipated that there will be an increase in these activities as the contributions to the Special Fund increase.

Forward Appraisal of Future Work 1959-64.—The Director-General, in a speech introducing this agenda item, said the appraisal resulted from a resolution of the U.N. Economic and Social Council (ECOSOC), and that parallel studies by other Agencies would be amalgamated into one comprehensive report.

The broad aim, he said, is "that member governments may see the programs of the various Agencies within one framework in proper perspective, and decide their course of action in different fields of activity with fuller knowledge of the goals they are to achieve and the efforts needed to achieve them."

Member governments would thus be able to judge whether the present balance among fields such as health, education, agriculture and industry called for any readjustment, and whether the objectives to be attained needed greater effort in any fields than was now being given.

In preparing the appraisal, The Director General said he had assigned priorities to those fields where the requirements of governments for guidance from FAO were expected to be greatest. As a working hypothesis, he had assumed that resources for technical and economic work in future would increase at an annual rate of 20 per cent; he stressed, however, that the level of the budget for any biennium was for the sovereign decision of the Conference.

Twelve major fields of work had been distinguished, covering among them the entire chain of production, distribution and consumption of agricultural commodities, together with the preliminary investigations on needs and resources and the supporting infra-structure in services. These 12 fields in turn had been broken down into 117 smaller appraisal units.

In the report, major expansion was called for in 30 of the 117 lines of work. Almost one-half of these expansions were proposed for lines within the fields entitled "social and economic institutions including agrarian structure", and "organization and administration of research and education and governmet services in agriculture".

For the field bearing on "techniques for increasing production", while still the largest single portion of FAO's work, a lesser percentage increase was envisaged. Moderate expansion was suggested for "international agricultural commodity problems" and for "general, statistical and economic information and analysis".

Mr. Sen stressed that the appraisal referred only to FAO's technical and economic work, and did not attempt to measure the impact of increased activities on central supporting services or administrative services.

The Conference considered that the Report was a useful approach to long-term programming of the work of the Organization and that this type of work should be continued. There was considerable reservation as to the financial acceptability of the hypothesis of the rate of increase, but the Conference took note of the fact that this was not a budgetary exercise, and that member countries were not committing themselves to any particular level of the budget.

Canada and the FAO.—The Canadian position in respect to the over-all program of work of the FAO was given by Mr. Harkness in his address. He said:

> "I am particularly interested in the theme underlying the Director-General's introduction to the program for 1960-61. I welcome its conclusions; although there are many problems awaiting solution the ensuing biennium should be one primarily of consolidation of FAO. The opportunities and need for accelerated international action in many fields are manifold. But I am confident that we are all in agreement that amongst these activities those within the mandate of FAO present an important claim on our resources. At the same time it is of fundamental importance that our response to these claims should be objective, balanced and well-conceived. The Director-General clearly indicated this when he observed that what is now needed is a consolidation of activities so that future development in the work of the Organization may be based on firm foundations. I would not expect a uniform response from all delegations on the emphasis to be given to particular parts of the program. I believe, however, that we can all agree that our fundamental objective is to derive the maximum benefit from the resources provided. This necessarily entails the careful selection of programs in order to ensure that priority activities are undertaken. During this Conference, the Canadian delegation expects both the program and its administration to be carefully examined to ensure that maximum benefits are derived from the resources approved by the General Conference. We also hope that in determining the budget level member states will recognize the heavy competing claims on resources of the many international activities. . . .
>
> "The pledges we have recently made for the Expanded Technical Assistance Program and the Special Fund indicate our continued interest in this work. We want to draw the attention of the Conference to the fact that this is the Tenth Anniversary of ETAP and to pay a tribute to the many experts who have gone into over 60 countries to

> assist the governments and their people in devising ways and means of increasing output and of raising the level of production. That is why we support wholeheartedly the work of the Agriculture, Fisheries and Forestry Divisions which have shown producers how to raise better crops and improve livestock, how to manage forests and wood lots, how to improve the returns from fisheries. We also support the work of the Economics Department that is devoting more of its resources to improving marketing and distribution of agricultural products. Increased output and better marketing should result in more and better food being made available.
>
> "During the past fifteen years countries have become to a considerable degree nutrition conscious. Canada is favored with an abundance of food, but this does not lessen our interest in nutrition problems which exist at home as well as in other countries. Active programs of research and education are being carried on in this field. The FAO Nutrition Division has also played an important role in this area. Since Canada's participation in the Hot Springs Conference in 1943, Canada has insisted on the fundamental place of nutrition in the program of the Food and Agriculture Organization." . . .

Besides being a member of the Council, which is the executive body of the Conference, Canada is a member of the Committee on Commodity Problems (CCP); the FAO Group on Grains; the Consultative Sub-Committee on Surplus Disposal (Washington), and the Committee on Constitutional and Legal Matters. Canada ranks fifth among the contributors to the FAO budget. Her share is 4.09 per cent of the total. She contributes to the field work of the FAO through her contribution of $2 million to the Expanded Technical Assistance Program and a similar amount to the Special Fund.

Canada has also participated in a number of FAO expert committees, dealing with such subjects as atomic energy, plant protection and stabilization and price support measures. A number of Canadians have served on technical assistance missions.

Canada has contributed to the work of the FAO, whose objectives are to improve the nutritional levels of less fortunate people, to raise the level of productivity of agriculture, fisheries and forestry, and has at the same time benefited from the exchange of knowledge and from a closer contact with the peoples of other countries.

PUBLICATIONS

Beef Mixed-Farms, Output and Management. Nelson, J. B. Farm Economics and Statistics Branch, Ontario Department of Agriculture, Toronto. 1959. pp. 17.

An economic analysis of the organization of 386 mixed-beef farms, especially concerned with size of business, use of capital and labor, and choice of enterprises.

Early Potato, Production Costs and Management. Nelson, J. B. and F. R. Abraham. Farm Economics and Statistics Branch, Ontario Department of Agriculture, Toronto, 1959. pp. 20.

A study of costs and returns in the production of early potatoes in the Ontario counties of Essex and Kent.

CORRIGENDUM

On page 134 of the December 1959 issue of The Economic Annalist "−140.9" should read "+140.9" in column 5, line 2 of Table 1. On page 136, "1,646" should read "−1,646" in column 5, line 1 of Table 4.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION
J. F. BOOTH, Chief

APRIL 1960 Vol. XXX No. 2

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ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production[e]
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
			1935-39=100					1949=100		1949=100
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	221.8	169.2	274.5	244.0	259.9	213.0	125.1	122.1	152.6
1959	230.6	219.6	167.6	271.6	240.8	269.5	219.1	126.5	121.3	....164.6
1959										
Jan	229.9	221.2	163.6	278.7	246.1	260.4	218.2	126.1	122.3	159.5
Feb	230.9	218.3	162.7	274.0	244.0	....	....	125.7	121.2	162.1
Mar	230.6	216.0	162.5	269.5	241.4	....	....	125.5	120.0	161.3
April	231.2	217.3	163.5	271.0	241.1	273.0	220.2	125.4	119.3	165.7
May	231.2	222.3	173.6	271.0	243.3	....	....	125.6	118.5	164.6
June	230.6	225.4	180.2	270.6	244.3	....	....	125.9	119.1	164.9
July	231.0	226.3	179.6	272.8	246.9	....	....	125.9	119.2	163.0
Aug	231.0	222.0	169.1	274.9	241.9	275.2	218.8	126.4	120.5	163.3
Sept	230.9	219.1	161.1	277.0	239.9	....	....	127.1	122.4	167.3
Oct	230.0	215.5	163.1	267.9	236.5	....	....	128.0	124.2	170.4
Nov	230.2	217.2	165.2	269.1	233.9			128.3	123.8	165.5
Dec	229.7	215.0	166.9	263.1	230.8	....	....	127.9	122.4	169.0
1960										
Jan	230.5	214.6	171.6	257.7	229.4	266.7	221.9	127.5	121.6	172.2
Feb	230.0	212.0	172.0	252.0	226.6	....	....	127.2	120.8	....
Mar	229.6	213.6	175.1	252.2	226.3	....	....	126.9	119.4	....

Note:–See earlier editions for index numbers previous to 1926

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1957—July 1958 are final with inclusion of final participation payments for Western Wheat, announced June 5th, 1959. Subsequent indexes are subject to revision.

(c) Exclusive of living costs. Includes farm implements, building materials, gaseline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, rates interest and farm wage rates.

(d) Differs from composite index by exclusion oftax rates, interest rates, and farm wage rates.

(e) For a detailed description of concepts, sources and methods see D.B.S. Reference Paper (61-502) Revised *Index of Industrial Production, 1935-57.*

THE ECONOMIC SITUATION

Commenting on the prospects for economic growth in Canada in 1960, the Minister of Trade and Commerce said, in an address to the French Chamber of Commerce in Canada, in Montreal, on February 10 that ". . . total demands upon the economy are likely to continue to increase, resulting in a further expansion of output and employment. While productive resources have become more fully utilized over the past year, there is still a considerable amount of available capacity in most industries. In addition, manpower and plant capacity are growing steadily. In these circumstances, it would appear that a production increase of considerable dimensions could take place without giving rise to excessive pressure upon productive capacities. At the same time, it is important that demands be kept within the scope of available resources. If this objective is achieved, Canadians can look forward with confidence to the continuation of sound economic growth."

Investment.—According to "Private and Public Investment in Canada, Outlook 1960" published by authority of the Minister of Trade and Commerce in February 1960, present capital expenditure plans for 1960 call for total outlays of $8.8 billion by all sectors of the Canadian economy. This investment program would be the largest on record and would exceed the previous peak of $8.7 billion reached in 1957 and the second highest peak—$8.4 billion—attained in 1959.

The 1960 investment program differs significantly from the programs of the past two years. A resurgence in business investment is expected, following the sharp decline of 1958 and the slight upward movement of 1959. On the other hand, outlays for housing and social capital will likely make up a smaller part of the total investment program; they are expected to increase by only about one per cent compared with 14 per cent in 1958 and six per cent in 1959 when this type of investment supplied an important economic stimulus.

The changed emphasis in the investment program reflects the changes in general economic conditions and businessmen's estimates of future business trends. In 1959 both domestic and export markets strengthened, production

Table 1.—Canadian Investment Programs, 1955-60

Sector	1955	1956	1957	1958	1959[a]	1960[b]
	—millions of dollars—					
Business capital (excluding housing)—						
Forest and mineral products	597	1,111	1,162	655	632	754
Fuel and power	823	1,224	1,553	1,325	1,089	1,122
Trade, finance and commercial services	562	611	690	706	759	855
Transportation, storage and communication	577	820	1,006	1,000	937	924
Other	1,034	1,238	1,243	1,183	1,303	1,345
Subtotal	3,593	5,004	5,654	4,869	4,720	5,010
Housing and social capital—						
Housing	1,397	1,547	1,430	1,782	1,759	1,696
Institutional services	408	402	455	515	531	625
Government departments and waterworks	846	1,083	1,178	1,198	1,401	1,439
Subtotal	2,651	3,032	3,063	3,495	3,691	3,760
Total capital expenditures	6,244	8,036	8,717	8,364	8,411	8,770

[a] Preliminary.
[b] Intentions.

increased and industrial operating levels moved upward; larger earnings and increases in depreciation reserves added to the supply of internal funds available for expansion or modernization purposes.

Planned business capital outlays entail a six per cent increase over 1959. Spending in the resource-based industries will increase sharply and become the main contributor to the general increase in business investment. Outlays made by the forest and mineral products industries are expected to exceed 1959 outlays by about 20 per cent; base metal mining, primary iron and steel, and forest-based industries will greatly increase their rate of spending for new facilities. Commercial building and secondary manufacturing industries are other areas of marked increases in investment. However, the fuel and power and the transportation and communication industries do not plan any important changes from their 1959 investment program.

Table 1 provides a comparative description of the investment programs of different sectors of the economy for the 1955-60 period.

External Trade.—Canada's commodity exports increased greatly in January 1960, compared with January 1959, but imports decreased slightly, thus resulting in an excess of exports over imports for the third successive month.

Total exports in January 1960 rose to $421.9 million, a higher value than in any previous January and an increase of a little more than 21 per cent over the corresponding total of $348 million for January 1959; imports declined to $396.5 million from $403.3 million. The January export surplus declined to $25.4 million in 1960 from $55.3 million in 1959.

Exports to the United States rose to $249.2 million in January this year from $198.6 million in January last year but imports dropped to $280.5 million from $284.9 million and the excess of imports over exports declined to $31.3 million from $86.3 million.

Total exports to the United Kingdom rose to $68.7 million from $55.3 million and imports to $41.4 million from $34.7 million; the export surplus rose to $27.3 million from $20.6 million.

Industrial Employment.—Canada's composite index number of industrial employment (1949=100) declined from 121.8 in November to 118.2 in December 1959. Seasonal declines occurred in all industry divisions except trade. In the durable goods manufacturing industries the effect of the seasonal influences on employment was partly offset by non-seasonal increases in the automobile industries where the steel shortages had led to the laying-off of larger numbers of workers in November. Following the settlement of strikes in the United States the supply situation improved and these workers were recalled for employment.

The composite figure of average weekly wages and salaries was $72.55 for December 1959 or $1.68 less than for the previous month. As in past years, average weekly earnings were lower in the last pay period in December than in the last one in November.

Labor.—The number of persons with jobs in January 1960 was estimated to be 5,699,000, or 162,000 less than in December 1959. The decline was slightly above that of January 1959 but about the same as the average December-January change in the previous six years. More than one-third of the decline occurred in construction and about half in trade, manufacturing, and agriculture.

Compared with a year earlier 161,000 more persons had jobs. The trade and service industries combined accounted for over 85 per cent of the additional jobs during the 12-month period. About 86,000 more men and 75,000 more women had jobs than in January 1959.

The total number of persons without jobs and seeking work was estimated to be 504,000 in January 1960, an increase of 134,000 from December 1959. The Canadian labor force in the week ending January 16 totalled about 6,203,000, compared with 6,231,000 a month earlier and 6,076,000 a year earlier.

Manufacturing.—Manufacturers' shipments in December were valued at $1,892 million compared with $1,948 million in November 1959. December shipments have fallen each year since 1955 but much less so in 1959 than in the four preceding years.

Shipments in 1959 rose to a record total of $23,238 million, exceeding by over seven per cent the $21,656 million total for 1958 and by almost five per cent the previous peak of $22,178 million in 1956. Shipments in the fourth quarter of 1959 rose to $5,942 million from $5,494 million in the fourth quarter of 1958.

Inventories owned at the end of December were valued at $4,065 million, a two per cent rise from the November total of $3,997 million. Inventories held but not owned declined between November and December and inventories held at the end of December totaled $4,389 million.

Consumer Credit.—Balances outstanding on the books of sales finance companies at the end of December 1959 totaled $1,133.6 million, compared with $1,139.9 million on November 30 and $1,025.6 million on December 31, 1958.

December 31 balances on consumer goods totaled $795.7 million, compared with $806.5 million a month earlier and $768.2 million a year earlier. Month-end balances on commercial goods rose to $337.9 million at December 31 from $333.4 million at November 30 and $257.4 million at December 31, 1958.

Consumer Price Index.—Canada's consumer price index (1949=100) declined from 127.5 to 127.2 between the beginning of January and February 1960. The food index moved from 121.6 to 120.8; lower prices were reported for a wide range of meats and declines in beef prices ranged up to five cents a pound. Egg prices, which had dropped about 20 cents between November 1959 and January 1960, declined slightly in February to reach 41 cents a dozen. Most fresh and canned fruits and vegetables were higher in prices; potato prices continued to rise and reached their highest February level since 1952.

Farm Prices.—The Canadian index of farm prices of agricultural products (1935-39=100) continued to decline and reached an estimated 229.7 for January 1960, which is 1.2 points lower than the estimate for December 1959. The January decline resulted from lower prices for livestock, poultry and eggs which more than offset higher prices for potatoes.

Compared with January 1959 the current index is lower by nearly 12 points. Lower grain prices reflect marketings of lower quality from the current western grain crop. Prices are also lower for livestock, poultry and eggs. Prices of dairy products and potatoes are the only prices above the January 1959 level.

Farm Net Income.—Net income of farm operators from farming operations in 1959 is estimated at $1,189.4 million which is seven per cent below the preliminary 1958 figure of $1,277.6 million but 12 per cent above the revised 1957 total of $1,061.5 million.

Cash income from the sale of farm products declined slightly, as a result of lower returns from wheat, oats, cattle, poultry meat, eggs and fruit which more than offset higher income from barley, flaxseed, tobacco, hogs, dairy products, and larger Canadian Wheat Board payments.

Farm-held inventories of grains continued to decline but their reduction was not as great in 1959 as in 1958. This slower decline and a gain in the value of income in kind largely offset the decline in cash income and supplementary payments; the total gross income thus declined only to $3,071.6 million in 1959 from $3,079.1 million in 1958. However, farm operating expenses and depreciation charges continued to rise in 1959 and net farm income was seven per cent lower than in 1958.

SOME IMPLICATIONS OF FARM CAPITAL IN CANADIAN AGRICULTURE FROM 1935 TO 1958

C. Varkaris

To the man-in-the-street capital simply means the accumulation of a certain sum of money and bank deposits, as well as holdings of stocks, bonds and mortgages. To the investor capital stock consists of the money permanently invested in a corporation. The economist, on the other hand, is more sophisticated in his search for a definition. Most classical and modern economists classify capital as one of the four major factors of production (the others being land, labor, and management or entrepreneurship). Capital, to them, consists of

Table 1.—Farm Capital, in Current Dollar Values, Canada, 1935-58

(million dollars)

Year	Land and buildings		Machinery		Livestock		Total	
	Dollars	Per cent	Dollars	Per cent	Dollars	Per cent	Dollars	Per cent
1935	3,449	76.3	534	11.8	541	11.9	4,524	100.0
1936	3,292	75.0	524	11.9	574	13.1	4,390	100.0
1937	3,253	74.2	527	12.0	604	13.8	4,384	100.0
1938	3,083	73.2	544	12.9	587	13.9	4,214	100.0
1939	3,107	72.3	547	12.7	644	15.0	4,298	100.0
1940	2,963	70.3	568	13.5	682	16.2	4,213	100.0
1941	3,030	71.4	596	14.0	621	14.6	4,247	100.0
1942	3,238	69.2	660	14.1	783	16.7	4,681	100.0
1943	3,454	65.5	722	13.7	1,098	20.8	5,274	100.0
1944	3,649	66.5	758	13.8	1,082	19.7	5,489	100.0
1945	3,711	66.5	827	14.8	1,042	18.7	5,580	100.0
1946	3,897	66.3	905	15.4	1,075	18.3	5,877	100.0
1947	4,212	65.9	1,027	16.1	1,149	18.0	6,388	100.0
1948	4,665	65.7	1,195	16.8	1,245	17.5	7,105	100.0
1949	4,717	62.8	1,416	18.9	1,371	18.3	7,504	100.0
1950	5,023	61.4	1,681	20.6	1,468	18.0	8,172	100.0
1951	5,513	58.3	1,932	20.4	2,014	21.3	9,459	100.0
1952	5,622	59.5	2,038	21.6	1,791	18.9	9,451	100.0
1953	6,034	61.9	2,152	22.1	1,557	16.0	9,743	100.0
1954	5,984	62.0	2,241	23.2	1,424	14.8	9,649	100.0
1955	6,236	62.9	2,210	22.3	1,463	14.8	9,909	100.0
1956	6,456	64.1	2,193	21.8	1,423	14.1	10,072	100.0
1957	6,528	63.7	2,198	21.5	1,517	14.8	10,243	100.0
1958	6,869	62.9	2,178	19.9	1,878	17.2	10,925	100.0

Sources: Dominion Bureau of Statistics, *Quarterly Bulletin of Agricultural Statistics*, March 1959, and unpublished data provided by the Farm Finance Section of the Agriculture Division.

Table 2.—Farm Capital in Constant Dollar Values[a], Canada, 1935-58

(million dollars)

Year	Land and buildings		Machinery		Livestock		Total	
	Dollars	Per cent	Dollars	Per cent	Dollars	Per cent	Dollars	Per cent
1935	3,366	74.8	559	12.4	574	12.8	4,499	100.0
1936	3,347	74.5	536	11.9	612	13.6	4,495	100.0
1937	3,308	74.8	542	12.3	570	12.9	4,420	100.0
1938	3,135	74.3	522	12.4	560	13.3	4,217	100.0
1939	3,032	72.3	528	12.6	635	15.1	4,195	100.0
1940	3,013	71.9	537	12.8	640	15.3	4,190	100.0
1941	2,957	73.9	546	13.6	499	12.5	4,002	100.0
1942	3,039	73.1	579	13.9	541	13.0	4,159	100.0
1943	3,010	69.9	617	14.3	679	15.8	4,306	100.0
1944	2,968	69.7	641	15.0	651	15.3	4,260	100.0
1945	3,017	69.4	718	16.5	612	14.1	4,347	100.0
1946	2,971	68.7	762	17.6	593	13.7	4,326	100.0
1947	2,938	67.9	813	18.8	574	13.3	4,325	100.0
1948	2,919	68.9	846	20.0	472	11.1	4,237	100.0
1949	2,877	67.1	894	20.9	517	12.0	4,288	100.0
1950	2,850	64.9	1,018	23.2	522	11.9	4,390	100.0
1951	2,862	63.7	1,034	23.0	598	13.3	4,494	100.0
1952	2,858	62.9	1,043	22.9	645	14.2	4,546	100.0
1953	2,884	62.4	1,094	23.7	644	13.9	4,622	100.0
1954	2,920	62.7	1,132	24.3	603	13.0	4,655	100.0
1955	2,926	62.5	1,112	23.7	647	13.8	4,685	100.0
1956	2,864	63.1	1,047	23.1	625	13.8	4,536	100.0
1957	2,844	63.7	982	22.0	636	14.3	4,462	100.0
1958	2,890	63.4	920	20.2	749	16.4	4,559	100.0

[a] Using average prices in the 1935–39 period as conversion factors.

man-made or produced means of production. Other economists emphasize the use of resources, by man, and see in it the "stock of material resources". This definition or concept is the one most generally favored by production economists and we shall adhere to it in our review of the changes in the structure of farm capital. We shall also divide this capital into three major groups or components, namely: 1) real estate, including land and buildings; 2) machinery and equipment, including automobiles, motor trucks and tractors; and 3) livestock.

Statistical data from the Dominion Bureau of Statistics indicate that total value of farm capital measured in current dollars grew from 4.5 billion dollars in 1935 to 10.9 billion in 1958. In 1935, 3.4 billion dollars were invested in land and buildings, 0.5 billion in livestock and 0.5 billion in machinery. In 1958 the value of land and buildings had risen to 6.9 billion dollars and that of livestock and machinery to 1.9 and 2.2 billion dollars respectively (Table 1).

The composition of farm capital has changed greatly since 1935. In 1935, for example, land and buildings accounted for 76.3 per cent of the total farm capital but by 1958 it had declined to 62.9 per cent. On the other hand, machinery and livestock rose from around 12 per cent each to 19.9 and 17.2 per cent respectively.

The growth of farm capital, however, does not look quite so impressive if one converts current dollar values into constant dollar values (using average prices in the 1935-39 period as conversion factors). Total farm capital, thus measured, grew from $4.5 billion in 1935 to $4.6 billion in 1958. Most of this

Table 3.—Average Farm Capital per Farm, in Current Dollar Values, Canada, 1935-58

Year	Land and buildings	Machinery	Livestock	Total
	-dollars per farm-			
1935	4,870	753	763	6,386
1936	4,683	746	816	6,245
1937	4,661	755	865	6,281
1938	4,450	785	847	6,082
1939	4,518	796	937	6,251
1940	4,341	833	1,000	6,174
1941	4,472	880	917	6,269
1942	4,818	983	1,165	6,966
1943	5,182	1,083	1,647	7,912
1944	5,520	1,147	1,636	8,303
1945	5,660	1,261	1,590	8,511
1946	5,993	1,392	1,654	8,959
1947	6,535	1,592	1,782	9,909
1948	7,296	1,869	1,947	11,112
1949	7,440	2,233	2,162	11,835
1950	7,991	2,675	2,335	13,001
1951	8,847	3,100	3,233	15,180
1952	9,164	3,322	2,919	15,405
1953	9,993	3,564	2,578	16,135
1954	10,069	3,771	2,397	16,237
1955	10,667	3,780	2,502	16,949
1956	11,228	3,815	2,474	17,517
1957	11,545	3,887	2,683	18,115
1958	12,360	3,918	3,378	19,656

Table 4.—Average Farm Capital per Farm, in Constant Dollar Values[a], Canada, 1935-58

Year	Land and buildings	Machinery	Livestock	Total
	-dollars per farm-			
1935	4,754	789	811	6,354
1936	4,760	763	871	6,394
1937	4,739	776	816	6,331
1938	4,524	754	808	6,086
1939	4,409	768	923	6,100
1940	5,171	922	1,098	7,191
1941	4,365	806	737	5,098
1942	4,522	861	805	6,188
1943	4,516	925	1,018	6,459
1944	4,489	970	985	6,444
1945	4,604	1,095	934	6,633
1946	4,569	1,172	913	6,654
1947	4,556	1,260	890	6,706
1948	4,565	1,322	738	6,625
1949	4,539	1,410	815	6,764
1950	4,534	1,620	830	6,984
1951	4,593	1,660	959	7,212
1952	4,659	1,700	1,052	7,411
1953	4,777	1,812	1,066	7,655
1954	4,914	1,906	1,015	7,835
1955	5,005	1,902	1,107	8,014
1956	4,981	1,821	1,087	7,889
1957	5,030	1,737	1,125	7,892
1958	5,200	1,655	1,348	8,203

[a] Using average prices in the 1935–39 period as conversion factors.

Table 5.—Capital and Income on Canadian Farms, 1935-58

Year	Farm capital[1]	Gross farm income[2]	Net farm income[2]	Capital/income ratio	
				Gross Income	Net income
		–thousand dollars–			
1935	4,523,308	702,418	237,636	6.40	19.00
1936	4,390,319	719,657	245,037	6.10	17.90
1937	4,383,894	804,859	307,024	5.40	14.30
1938	4,213,914	859,074	364,201	4.90	11.60
1939	4,298,763	944,352	430,804	4.60	10.00
1940	4,214,097	998,440	469,896	4.20	9.00
1941	4,247,177	1,049,608	488,736	4.00	8.70
1942	4,681,164	1,713,997	1,029,509	2.70	4.50
1943	5,274,723	1,558,051	792,854	3.40	6.70
1944	5,489,527	1,951,772	1,143,041	2.80	4.80
1945	5,580,406	1,691,149	868,175	3.30	6.40
1946	5,877,828	1,992,973	1,077,980	2.90	5.50
1947	6,389,545	2,182,581	1,130,293	2.90	5.70
1948	7,105,054	2,718,710	1,554,080	2.60	4.60
1949	7,503,162	2,631,443	1,415,787	2.90	5.30
1950	8,171,298	2,551,457	1,219,757	3.20	6.70
1951	9,458,552	3,419,084	1,936,990	2.80	4.90
1952	9,451,007	3,500,239	1,919,439	2.70	4.90
1953	9,743,314	3,207,074	1,644,382	3.00	5.90
1954	9,648,668	2,604,447	1,025,272	3.70	9.40
1955	9,908,757	2,923,824	1,289,964	3.40	7.70
1956	10,072,473	3,217,837	1,457,204	3.10	6.90
1957	10,242,080	2,782,616	1,053,905	3.70	9.70
1958	10,924,648	3,079,085	1,277,562	3.50	8.60

[1] SOURCES: Dominion Bureau of Statistics, *Quarterly Bulletin of Agricultural Statistics*, March 1959, and unpublished data provided by the Farm Finance Section of the Agriculture Division.

[2] Dominion Bureau of Statistics, *Handbook of Agricultural Statistics*, Part II, Reference Paper 25, 1926–57.

growth occurred in machinery, which grew from $559 million in 1935 to $920 million in 1958. A remarkable increase also occurred in the value of livestock which grew from $574 million in 1935 to $749 million in 1958. The value of land and buildings, on the other hand, declined from $3.4 billion in 1935 to $2.9 billion in 1958 (Table 2).

The grouping of all Canadian farms in one large compact block tends to hide some very important developments at the individual farm level. One must therefore pursue his analysis to take account of the changes in the number and in the average size of farms. The number of Canadian farms declined from 708,200 in 1935 to only 555,786 in 1958.[1] The area in farms, on the other hand, changed from 163 million acres in 1931 to 174 million acres in 1956 and the average size of farm thus rose from 224 acres in 1931 to 302 acres per farm in 1956.

Changes in the average size of farm exerted an important effect on the average value of capital per farm. In current dollars, this value rose from $6,386 in 1935 to as much as $19,656 in 1958, which represents a total increase of 208 per cent or an average annual increase of nine per cent. When current values are converted into constant values the 1958 figure drops to only $8,235,

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[1] Figures on farm numbers, from 1941 to 1956 inclusive, have been adjusted to take account of the change made in 1946 in the Canadian Census definition of a farm. Figures for intercensus years were interpolated.

Table 6.—Capital and Repair Expenditures on Canadian Farms, 1935-58

Year	Capital expenditures			Repair expenditures			Capital and repair expenditures
	Construction	Machinery and equipment	Total	Construction	Machinery and equipment	Total	Grand total
	1	2	(1 + 2) 3	4	5	(4 + 5) 6	(3 + 6) 7
	–millions of dollars–						
1935	5.3	34.4	39.7	9.6	22.2	31.8	71.5
1936	7.1	44.2	51.3	10.3	25.7	36.0	87.3
1937	9.1	62.9	72.0	10.1	32.7	42.8	114.8
1938	8.5	67.4	75.9	10.7	35.7	46.4	122.3
1939	10.1	63.0	73.1	10.8	35.4	46.2	119.3
1940	11.0	82.6	93.6	14.2	41.3	55.5	149.1
1941	15.3	90.0	105.3	19.9	44.7	64.6	169.9
1942	13.7	71.0	84.7	26.5	46.3	72.8	157.5
1943	14.0	39.3	53.3	34.1	46.2	80.3	133.6
1944	20.3	72.6	92.9	39.1	48.7	87.8	180.7
1945	25.6	89.8	115.4	37.4	52.1	89.5	204.9
1946	39.1	132.8	171.9	36.1	60.0	96.1	268.0
1947	45.4	213.2	258.6	39.6	70.9	110.5	369.1
1948	56.9	275.0	331.9	47.2	80.2	127.4	459.3
1949	72.5	352.6	425.1	56.9	83.0	139.9	565.0
1950	71.2	384.6	455.8	57.4	90.7	148.1	603.9
1951	80.5	416.6	497.1	63.5	92.4	155.9	653.0
1952	87.4	445.9	533.3	66.1	101.7	167.8	701.1
1953	95.3	433.6	528.9	72.2	107.0	179.2	708.1
1954	77.1	282.9	360.0	68.3	105.9	174.2	534.2
1955	86.5	307.1	393.6	65.6	111.2	176.8	570.4
1956	98.1	353.4	451.5	72.8	121.0	193.8	645.3
1957	92.1	317.6	407.7	66.9	117.7	184.6	594.3
1958	100.2	342.9	443.1	72.9	133.0	205.9	649.0

Source: Department of Trade and Commerce, unpublished data.

a much more modest increase of 29 per cent for the 23-year period and of 1.2 per cent annually, on the average (Tables 3 and 4).

To be fully meaningful, inquiries into changes in the volume of capital invested must extend into an examination of the income accruing from the increase in capital. A computation of capital-income ratios shows that, in 1935, as much as $6.40 were invested in land, buildings, machinery and livestock for every dollar of gross farm income.[1] The gap narrowed considerably in subsequent years and in 1958 only $3.50 were invested for each dollar of gross farm income. The capital-net income[2] ratio followed a similar trend. In 1935 as much as $19.00 and in 1958 only $8.50 were invested for every dollar of net income (Table 5).

These figures clearly indicate that Canadian farmers have become more efficient in the use of their capital. Efficiency in the use of capital, however, has not led to a decline but to a marked increase in the capital required for the management of a farm business. These higher requirements stem primarily from 1) the steadily lower purchasing value of the dollar; 2) the considerable enlargement of the average farm business; 3) the disbursements necessary to

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[1] Gross income includes cash income from the sale of farm products, income in kind, supplementary payments made by the government and the value of inventory changes.

[2] Returns to operator's labor and capital.

Table 7.—Net Income—Expenditure Ratios on Canadian Farms, 1935-58

Year	New capital as percentage of net income	Repairs as percentage of net income	Total expenditure as percentage of net income	Total expenditure as percentage of previous year's net income
	–per cent–			
1935	16.7	13.4	30.1	
1936	20.9	14.7	35.6	36.7
1937	23.5	13.9	37.4	46.9
1938	20.8	12.7	33.5	39.8
1939	17.0	10.7	27.7	32.8
1940	19.9	11.8	31.7	34.6
1941	21.6	13.2	34.8	36.2
1942	8.2	7.1	15.3	32.2
1943	6.7	10.1	16.8	13.0
1944	8.1	7.7	15.8	22.8
1945	13.3	10.3	23.6	17.9
1946	15.9	8.9	24.8	30.9
1947	22.9	9.9	32.8	34.2
1948	21.4	8.2	29.6	40.6
1949	30.0	9.9	39.9	36.4
1950	37.4	12.1	49.5	42.7
1951	25.7	8.0	33.7	53.5
1952	27.8	8.7	36.5	36.2
1953	32.2	10.9	43.1	36.9
1954	35.1	17.0	52.1	32.5
1955	30.5	13.7	44.2	55.6
1956	31.0	13.3	44.3	50.0
1957	38.9	17.5	56.4	40.8
1958	34.7	16.1	50.8	61.6

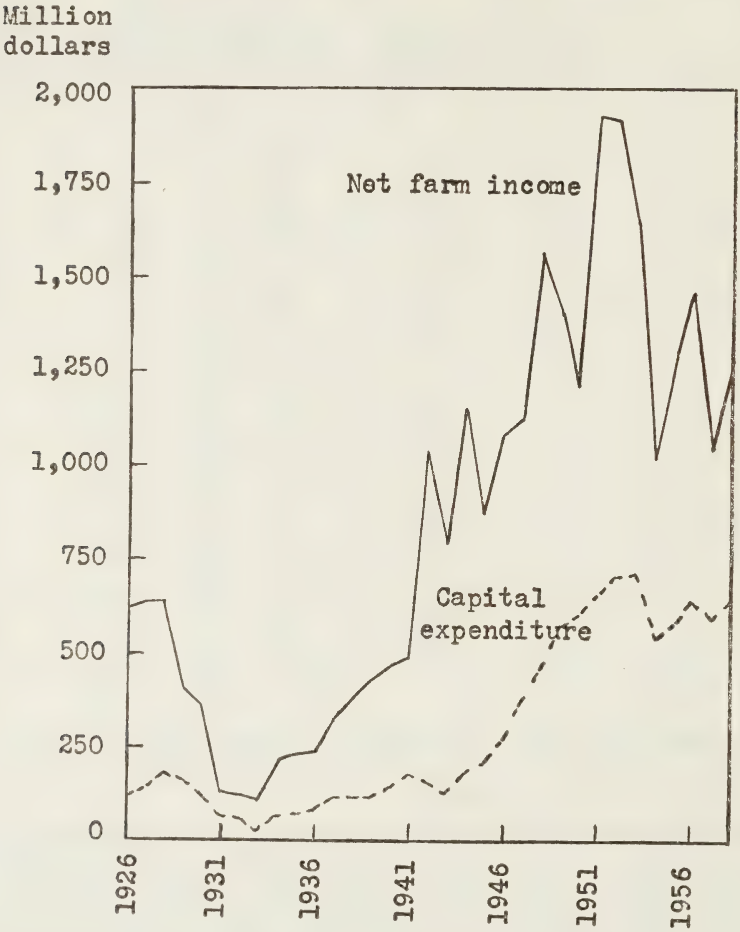
take quick and full advantage of technical developments and other innovations; 4) the higher cost of items purchased for farm family living; and 5) the higher levels of living of the farm families.

Capital formation or accumulation, at least in periods of prosperity, tends to be a continuous process. Capital accumulation is not only an indicator but also an essential condition of long-term economic growth. Farm income, sometimes activated or made possible by the use of borrowed funds, is the primary determinant of investment or capital accumulation. The build-up of income itself is the reward for the intensity and efficiency displayed in carrying out three interdependent activities, namely, saving, financing and investing.

By saving the farmer refrains from spending too much on current consumption and uses the money, thus set aside, for productive purposes. His financing activities imply the use of his savings and/or of borrowed funds to add to the productive capacity of his farm business. By investing he uses all available resources in the production of goods for sale. All three of these activities are geared towards a rise in the income-producing capacity of his business.

On Canadian farms, the trends in capital egpenditures for non-residential construction, machinery, equipment, and repairs closely follow the trends in net farm income. As a rough example, in 1935 net farm income totaled only $237.6 million and capital expenditures were no higher than $71.5 million, or 30 per cent of net farm income. In 1958, when net farm income had risen to $1,277 million capital expenditures rose to $649.0 million, or 50 per cent of

Graph 1—Net Farm Income and Capital Expenditure, on Canadian Farms, 1926-58



net farm income (for a detailed description of these trends see Chart I and Table 6).

The net income-capital expenditure ratios indicate that during the 1935-58 period about 35 per cent of the net farm income was reinvested in agriculture. This ratio varied from a low of 15.3 per cent in 1942 to a high of 56.4 per cent in 1957. As most of the investment in any given year is generally made from income realized in the preceding year or years one may find more significance in the ratio between expenditure in a certain year and net income realized the preceding year and in an examination of these ratios over a fairly long period (Table 7).

The foregoing analysis supports our assumption that the size of farm income is the major determinant of the size of farm investment. Income, however, is not the sole determinant. Another very important one inheres in the farmer himself, in his ability to invest or to channel income into productive investment opportunities.

INFRARED AIR PHOTO INTERPRETATIONS OF GRAINS

L. E. Philpotts

For many years air photo interpreters, especially agricultural air photo interpreters, had tried unsuccessfully to identify the different kinds of grains—mainly wheat, oats, barley, flax and rye—by the use of black and white panchromatic film.[1]

In 1951 the Economics Division initiated a crop identification program consisting of three short flight lines, one in each of the Prairie Provinces, photographed periodically throughout the growing season. The photography was of the panchromatic type only.

The program was a success in that it quickly indicated that, in general, the grains could not, efficiently, be interpreted separately. However, other identifications could be made in the cultivated and other fields.

Since 1951 it has been possible to interpret the grains collectively, separating them from all other types of land use. It has also been possible to interpret hay, improved pasture, native pasture, other unimproved land, orchards, row crops collectively, farm gardens and all the remaining man-made soil, geologic, topographic and forestry features.

Air photography keeps on recording great improvements in cameras, lenses, filters, photographic papers and chemicals, processing and the co-ordination of these various improvements, to achieve better over-all results.

More recently, the Economics Division and the Spartan Air Services of Ottawa conducted a joint research project on interpretation of cereal crops by the use of infrared[2] photography. The Central Experimental Farm, Ottawa, was chosen as the location which best combined all the requisites for doing this type of research work in air photography. At the "Farm", the different kinds of grain are so located that they can all be photographed on one print. The grain plots are handy for ground observations and the Spartan Air Services' flying facilities are at a very short flying distance.

Types, Scales and Date of Photography.—Different types of photography were employed: panchromatic film, using an aviogon lens with a Wratten 2.2X filter, with prints on both the glossy and the semi-matte types of paper and processed by both the hand and the automatic types of printers; and infrared film, using an aviogon lens with a Wratten P. 2X filter, with prints on both the glossy and the semi-matte types of papers and processed by both the hand and the automatic types of printers.

The focal length of the camera was 152.16 mm. or about six inches.

The photos were taken at two different flying heights so that the scale on the first flight was 1″/6,000″ or 500 feet-to-the-inch and on the second flight 1″/12,000″ or 1,000 feet-to-the-inch.

The flights were made on July 17, 1959. A number of flights should have been made throughout the entire growing season, since color, density and maturity of cereals change throughout that season. Unfortunately, the agencies concerned did not find it possible to do so.

Ground Observations.—Observations on the ground were carried out at the same time as observations from the air. The interpreters noted the differing heights of the plants, maturity of the grains, color of the stalks, color of the heads of grains, and density of grains.

Air Photo Interpretations.—Pocket-type stereoscopes with magnifying powers of 2.5 and 5.0 were used for all air photo interpretations. The stereoscopes efficiently handled all three-dimensional factors.

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[1] Panchromatic film is sensible to all colors, particularly 'red'.

[2] Infrared, meaning 'below the red'—an invisible ray in the spectrum.

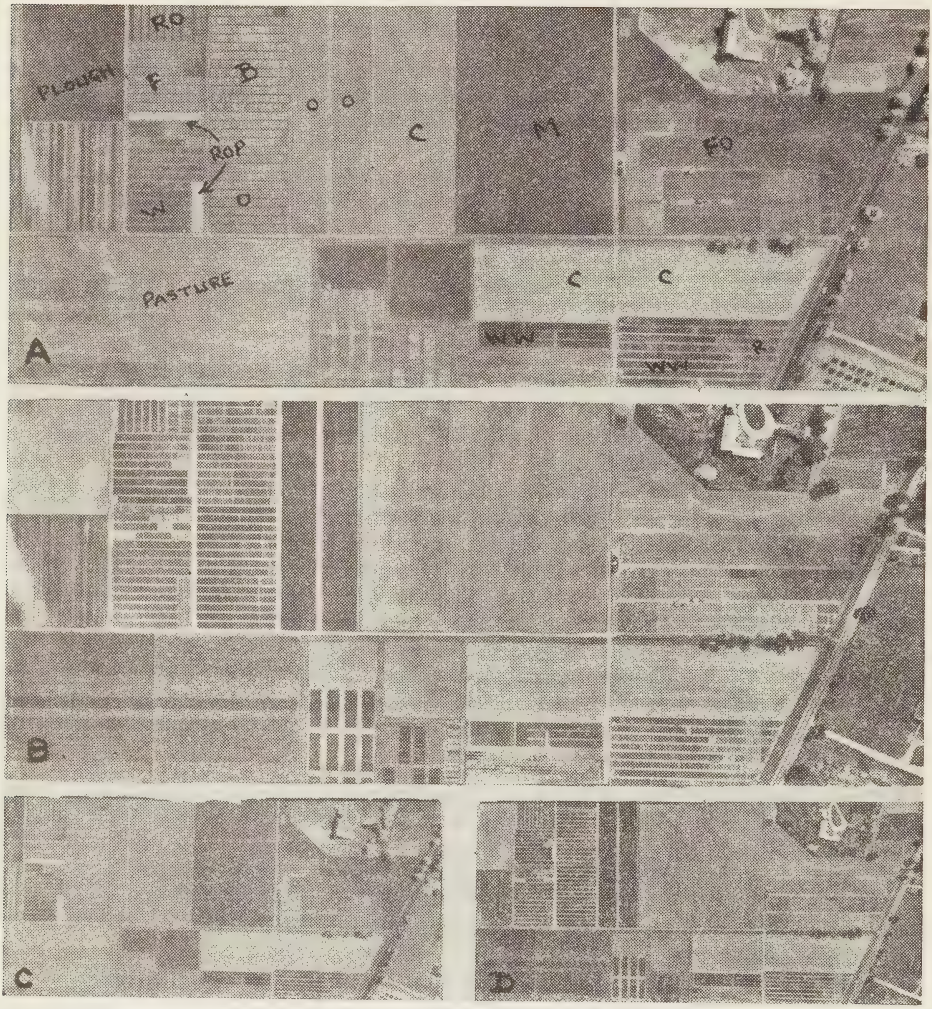


Figure 1. Four Vertical Photographs of the Same Area of the Central Experimental Farm, Ottawa, on July 17, 1959.

A. Infrared photo illustrating the tonal and textural patterns of: spring wheat (W) and winter wheat (WW) with their dark to very dark tones; oats (O), barley (B), flax (F) and rye (R), with their very light to light grays, due to the light yellows and light greens; meadow (M), with a very dark tone. (Stereoscopic viewing would show the 'emptiness' of the field compared with the 'fullness' of the wheat areas, and the different tillage patterns of each); forage (Fo), with dark gray to very dark gray tones (stereoscopic viewing shows the different tillage and textural patterns compared with wheat); grains clipped all summer (C), with the tillage patterns visible to the naked eye; row crop (RO), in this case beans, with the individual rows visible to the naked eye; and row crop (ROP), in this case peas with a more homogeneous pattern than the beans—the pattern of the rows is apparent in the background. The scale is 500 feet-to-the-inch.

B. Panchromatic photo illustrating differences in total patterns from those of the corresponding objects in the infrared photo. Note the sharper tonal and textural qualities of the panchromatic photo, printed automatically, compared with the infrared photo. The scale is 500 feet-to-the-inch.

C. Infrared photo at 1000 feet-to-the-inch.

D. Panchromatic photo at 1000 feet-to-the-inch.

One feature immediately apparent was the more abrupt or sharper outline of the details on the glossy type of photo than on the semi-matte type of paper.

The panchromatic photo, when processed by the automatic printer, had sharper tones and more vivid contrast than the hand-processed panchromatic photo.

The panchromatic photos, processed by either the hand or the automatic type of printer, are excellent for interpreting grains collectively, other crops and improved and unimproved lands. However, it was very difficult and indeed almost impossible to interpret one grain from another by this method.

The infrared photo can be used to distinguish wheat from oats, barley, flax and rye at a given time during the growing period. It is not possible to separate grains other than wheat from one another, by air photo interpretation, with the infrared photo during the growing period of the grains.

The observation of the wheat on the ground showed that the mature wheat, well 'headed' and about 32 inches in height, had light green stalks with a bluish tinge near the tops of the stalks, and heads of a very light green color. The slightly more immature wheat had very bluish stalks with light green heads.

The bluish tinge apparently supplies the 'inroad' to the interpretation of the wheat in the infrared photo. Dr. W. Clark, Kodak Research Institute, Rochester, New York, states that certain types of blue will photograph black or dark by infrared.

The cereal crops specialists of the Central Experimental Farm say that just before heading the wheat stalks take on a bluish tinge which lasts from about three to four weeks.

The stalks and heads of oats, barley, flax and rye, at the time of flying, all had colors ranging from very light to light grays in the infrared photo, compared with dark grays, very dark grays and almost black tonal patterns for wheat. All the grains were estimated to be at about the same stage of maturity.

The tones were darker in the smaller than in the larger-scale photos, probably because a greater homogeneity of density can be observed from a greater height. Although this is a good feature when considering the tones as identifiers, one must remember that the greater height yields fewer details and a lower quality of texture. If it becomes necessary to use both criteria simultaneously, for either economic or efficiency reasons, we must then find the optimum scale of photography to be used.

Scales of about 1,000 feet-to-the-inch to 1,500 feet-to-the-inch, and perhaps even to 2,640 feet-to-the-inch, should fulfill the optimum conditions, especially with the latest types of available photographic equipment. Not only can the air photo be viewed for the tonal factor, after being taken at the mentioned scales and processed by the latest equipment, but it can also be enlarged to aid in the interpretation of the details and of the textural patterns once the tonal factor has been established.

Summary.—The agricultural air photo interpreter may use infrared photography to distinguish wheat from other grains and other crops at the time when the bluish tinge appears on the wheat stalks.

More information will become available for the identification of wheat and perhaps other grains when further experiments in the use of infrared photography are carried out over vaster fields in different geomorphologic localities across Canada; these fields will be photographed periodically during the growing season.

For many years the agricultural air photo interpreter has centered his attention on the interpretation of the tonal and textural patterns of the panchromatic photo. Any intelligent air photo interpreter should be able to do a methodical "switch-over" from his embedded knowledge of the panchromatic aspects to the study of the tonal and textural patterns of the infrared photo.

NUMBER, PRODUCTION AND LOCATION OF DAIRY MANUFACTURING DRY SKIM MILK AND EVAPORATED WHOLE MILK IN CANADA, 1953-58

J. W. Couston

In recent years the production of dry skim milk increased sharply and resulted in surplus stocks. The production of evaporated whole milk, on the other hand, kept pace with increased market requirements. The change in the production of these products was accompanied by a change in the number and output of plants engaged in their manufacture. This article traces the course of these changes during the period from 1953 to 1958.

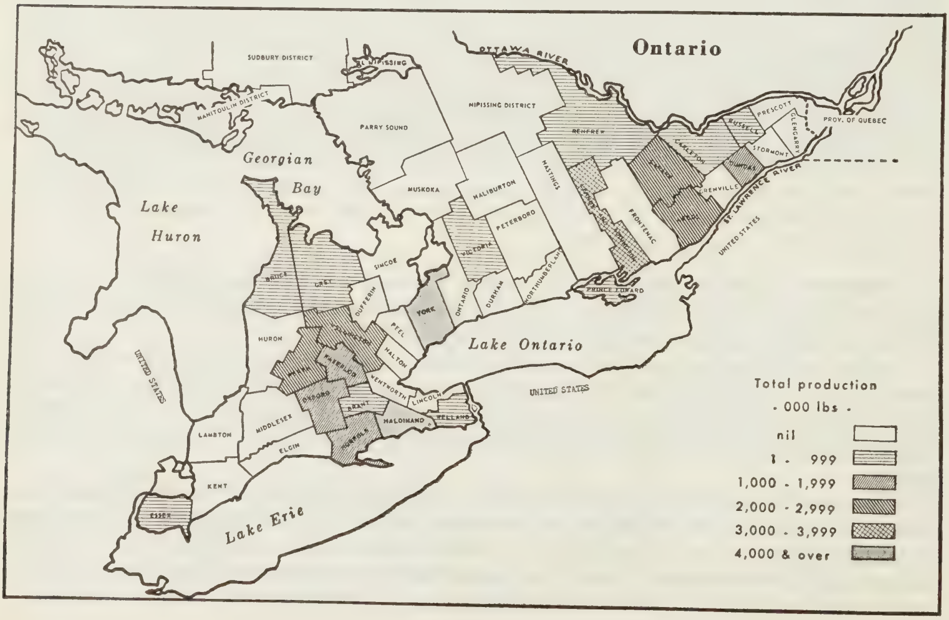
Production and Disposition of Dry Skim Milk, 1953-58.—The annual production of dry skim milk in Canada increased gradually from 1953 to 1955, declined in 1956 and increased sharply in 1957 and 1958. It reached 186.8 million pounds in 1958, which was an increase of 66.1 million pounds or 54.8 per cent from the previous year and 125.3 per cent from 1953.

The quantity of dry skim milk sold in the domestic market moved steadily upward during this period as a result of the advance in population and per capita consumption. Exports declined from 23.5 million pounds in 1953 to less than one million pounds in 1957 but the disposal of government-owned stocks raised the 1958 export total to 46.5 million pounds (Table 1).

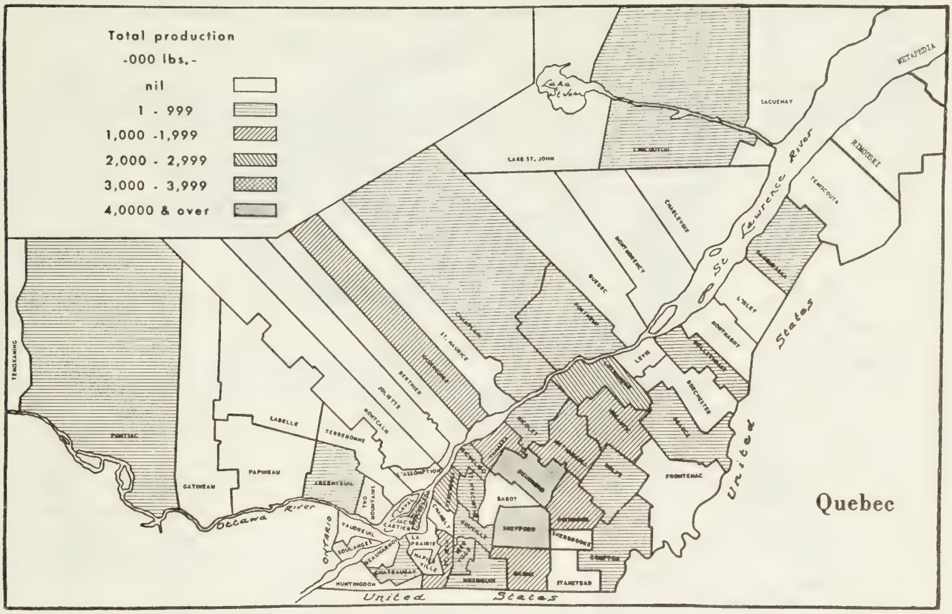
Production and Disposition of Evaporated Whole Milk, 1953-58.—The production of evaporated whole milk during the 1953-58 period generally conformed to the increased requirements of the domestic market. Exports decreased by 76 per cent from 1953 to 1958 (Table 2).

Dry Skim Milk Plants.—The number of plants producing dry skim milk decreased from 85 in 1953 to 71 in 1956 and increased in the following years to

Ontario: Total skim milk powder production, by county, 1953



Quebec: Total skim milk powder production, by county, 1953



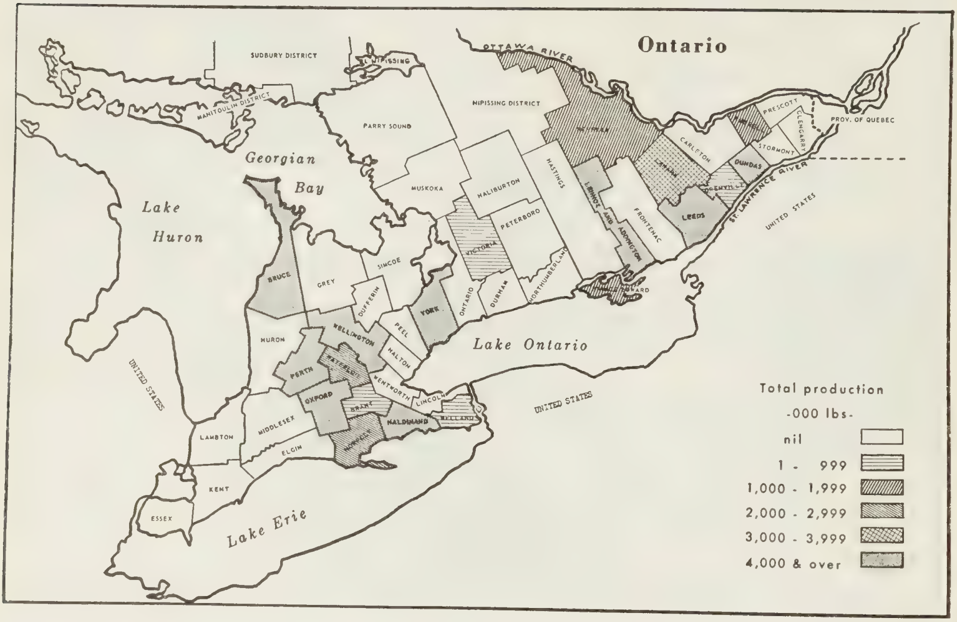
95 in 1958. Despite this fluctuation in the number of plants, the average production per plant became progressively larger in each year except 1956 and more than doubled from 1953 to 1958 (Table 3).

This definite shift toward a larger output per plant between 1953 and 1958 is further emphasized by the changes in the distribution of plants classified by output (Table 4). In 1953 five plants reported an output of 2.55 million pounds or more and accounted for 30.6 per cent of the total production of dry skim milk. In 1958, this group included 29 plants with a combined output equal to 73.8 per cent of total production. Output ranged from 2.55 to 6.5 million pounds for most of these larger plants (Table 5) and did not exceed ten million pounds for the largest.

Table 1.—Production and disposition of dry skim milk, Canada, 1953-1958

	1953	1954	1955	1956	1957	1958
	-thousand pounds-					
Stocks, January 1	16,645	10,709	11,848	13,411	7,978	47,838
Production	82,914	83,332	87,115	79,005	120,710	186,768
Imports	101	7	800	3,198	9,933	11
Total supplies	99,660	94,048	99,763	95,614	138,621	234,617
Exports	23,479	10,432	5,878	5,900	719	46,488
Stocks, December 31	10,709	11,848	13,411	7,978	47,838	77,262
Domestic disappearance	65,472	71,768	80,474	81,736	90,064	110,867
	-pounds-					
Per capita consumption	4.4	4.7	5.1	5.1	5.4	6.5

Ontario: Total skim milk powder production, by county, 1958



Quebec: Total skim milk powder production, by county, 1958

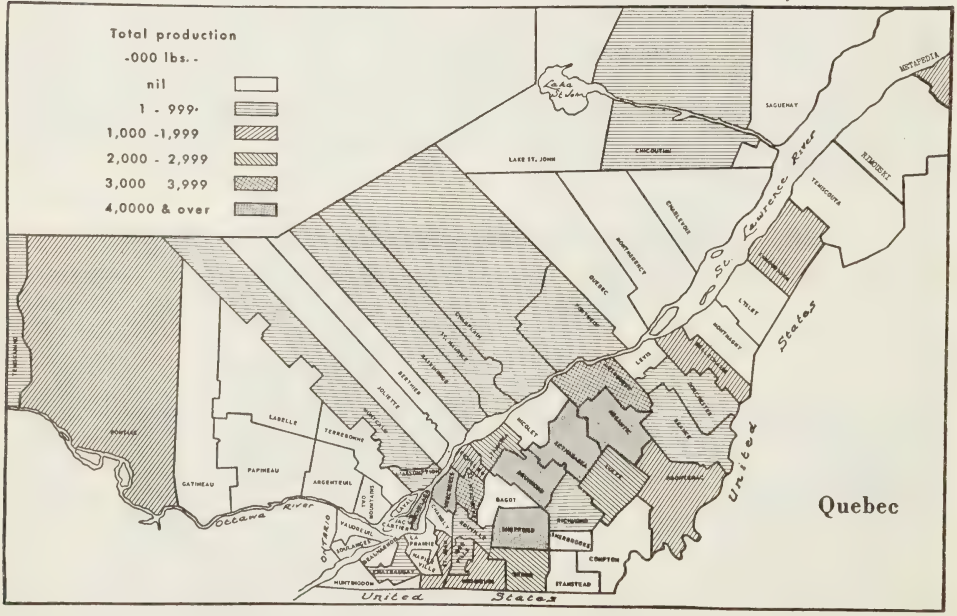


Table 2.—Production and disposition of evaporated whole milk, Canada, 1953-1958

	1953	1954	1955	1956	1957	1958
	–thousand pounds–					
Stocks, January 1	64,661	48,369	46,480	47,729	38,045	47,878
Production	272,009	280,350	294,938	305,152	316,824	310,176
Imports	—	—	—	—	—	—
Total supplies	336,670	328,719	334,418	352,881	354,869	358,054
Exports	13,382	6,284	5,307	6,319	4,649	3,152
Stocks, December 31	48,369	46,480	47,729	46,847	47,878	47,781
Domestic disappearance	274,919	275,955	288,382	299,715	302,342	307,121
	–pounds–					
Per capita consumption	18.5	18.0	18.4	18.8	18.2	18.0

Table 3.—Number, total and average production of plants reporting the manufacture of dry skim milk, Canada, 1953-1958

	1953	1954	1955	1956	1957	1958
	–number–					
Number of plants	85	78	74	71	75	95
	–thousand pounds–					
Total production	82,914	83,332	87,115	79,005	120,710	186,768
Average output per plant	975	1,068	1,177	1,113	1,609	1,966

Table 4.—Plant distribution by production of plants reporting the manufacture of dry skim milk, Canada, 1953 and 1958

	1953			1958		
Output	Number of plants	Per cent of total production	Average output	Number of plants	Per cent of total production	Average output
'000 lbs.	No.	–per cent–	'000 lbs.	No.	–per cent–	'000 lbs.
0–149	19	1.3	54.7	12	0.5	77.0
150–749	33	14.8	371.9	28	6.1	409.4
750–1,349	10	13.3	1,106.5	14	7.8	1,036.5
1,350–1,949	12	23.9	1,653.2	8	7.0	1,624.9
1,950–2,549	6	16.1	2,223.0	4	4.8	2,231.3
2,550 or more	5	30.6	5,072.4	29	73.8	4,756.7
Canada	85	100.0	975.5	95	100.0	1,966.0

Table 5.—Plant distribution by production of plants reporting the manufacture of 2.55 million or more pounds of dry skim milk, Canada, 1958

Output	Number of plants	Per cent of total production	Average Output
'000 lbs.	No.	–per cent–	'000 lbs.
2,500–4,549	12	19.5	3,042.7
4,550–6,549	12	33.2	5,175.6
6,550 or more	5	21.1	7,864.9

Use of the spray process in the manufacture of dry skim milk also advanced rapidly during the 1953-1958 period. The number of plants using the spray process increased by 16 and those using the roller process decreased by one. There were fewer spray plants than roller plants but the average output of the spray plants was three to four times greater (Table 6). Also, those plants which produced both spray and roller process powder manufactured a much larger proportion of spray process powder than previously. Consequently, the proportion of dry skim milk produced by the spray process was much larger in 1958 than in 1953.

The greater output of spray process dry skim milk seems to be related to the higher selling price of spray powder and the productive capacity of spray equipment. Compared with the roller process, the spray process entailed higher initial costs and required a larger volume of production to reduce unit costs to the level required for profitable operation.

A large number of the plants producing dry skim milk also made butter, especially in Ontario and Quebec (Table 7). The remainder of these plants processed one or more other products such as ice cream, fluid milk, cheese and concentrated whole milk products.

There is a direct relationship between the average output of dry skim milk and butter (Table 8). In general, and because butter and dry skim milk

Table 6.—Number, total and average production of spray, roller, and spray-roller [a]plants reporting the manufacture of dry skim milk, Canada, 1953 and 1958

	1953			1958		
	Spray plants	Roller plants	Spray-roller plants	Spray plants	Roller plants	Spray-roller plants
			–number–			
Number of plants	21	59	5	32	56	7
			–thousand pounds–			
Total production	46,899	27,975	8,041	117,779	49,193	19,796
Average output per plant	2,233	482	1,608	3,681	878	2,828

[a]Plants manufacturing both spray and roller process dry skim milk.

Table 7.—Number of plants reporting the manufacture of dry skim milk which also made butter, Canada, by provinces 1953-1958

Province	1953	1954	1955	1956	1957	1958
			–number of plants–			
Prince Edward Island	1	1	1	1	1	2
Nova Scotia	—	—	—	—	—	—
New Brunswick	1	1	1	—	2	2
Quebec	38	29	27	28	28	36
Ontario	23	23	21	21	20	24
Manitoba	1	1	1	1	—	—
Saskatchewan	1	1	1	—	—	1
Alberta	4	4	4	4	3	3
British Columbia	—	—	—	—	—	1
Canada	69	60	56	55	54	69

are commonly manufactured as joint products, the average output of butter increased along with the output of dry skim milk.

Evaporated Whole Milk Plants.—In the 1953-58 period, as the production of evaporated whole milk increased to supply the expanding domestic market the number of plants decreased and the average output increased. The reduction in plant numbers between 1953 and 1958 occurred entirely in Ontario and Quebec but, as a result of greater average output, the Central Provinces still retained their three-quarter share of the total production (Table 9).

Regional Production.—Quebec and Ontario are the leading dairy areas in Canada. These provinces contribute about two-thirds of the milk produced in Canada, followed by the Prairie region with about 22 per cent, the Maritime Provinces with seven per cent, and British Columbia with four per cent. Based on this distribution of milk production, Canada can be divided into four regions as follows: the Maritimes, Quebec, Ontario, and the West comprised of the four western provinces.

Table 8.—Plant distribution, according to the production of dry skim milk, by plants reporting the manufacture of dry skim milk and butter, Canada, 1953-1958

Output of dry skim milk	Number of plants	Dry skim milk		Butter	
		Average output	Per cent of total production	Average output	Per cent of total production
'000 lbs.	No.	'000 lbs.	-per cent-	'000 lbs.	-per cent-
			-1953-		
0-599	41	215.8	13.6	490.7	40.3
600-1,199	7	915.9	9.8	641.7	9.0
1,200-1,799	10	1,494.6	22.9	1,044.3	20.9
1,800-2,399	7	2,100.3	22.6	1,083.8	15.2
2,400 or more	4	5,063.8	31.1	1,823.0	14.6
Canada	69	944.4	100.0	723.7	100.0
			-1958-		
0-599	30	317.6	7.6	748.3	22.5
600-1,199	8	945.5	6.0	670.7	5.4
1,200-1,799	9	1,432.0	10.3	1,194.5	10.8
0,800-2,399	4	2,231.3	7.1	1,911.1	7.6
2,400 or more	18	4,812.6	69.0	2,982.0	53.7
Canada	69	1,819.3	100.0	1,447.6	100.0

Table 9.—Number, total and average production of plants reporting the manufacture of evaporated whole milk, Ontario, Quebec and Canada, 1953 and 1958

Region	1953			1958		
	Number of plants	Total production	Average output	Number of plants	Total production	Average output
	No.	'000 lbs.	'000 lbs.	No.	000 lbs.	'000 lbs.
Ontario	8	113,338	14,167	5	97,989	19,598
Quebec	6	93,550	15,592	4	130,544	32,636
Canada	18	272,009	15,112	13	310,176	23,860

Quebec replaced Ontario as the largest producer of dry skim milk during the 1953-58 period, mainly because of an almost threefold increase in the average output of the plants in Quebec. In 1953, the average output was moderately larger in Ontario than in the other regions. By 1958, the average output for plants in both Quebec and Ontario amounted to about four to five times that of the other regions (Table 10).

Less than half the plants produced a million or more pounds of dry skim milk in 1953 and more than half of them produced this amount in 1958. Each area, except the West, recorded an increase in total production and average output. Plants with an output of two million pounds or more accounted for much of the larger production in Quebec and Ontario. These plants produced about 80 per cent of the total production in both provinces during 1958 as compared with 32 per cent in Quebec and 58 per cent in Ontario during 1953 (Table 11).

Most of the Quebec plants were located in the Eastern townships and in the Montreal district. The remainder were scattered throughout the province, mainly along the St. Lawrence River. Most of the Ontario plants were fairly

Table 10.—Number, total and average production per plant reporting the manufacture of dry skim milk, by regions, 1953 and 1958

Region	1953			1958		
	Number of plants	Total production	Average output	Number of plants	Total production	Average output
	No.	'000 lbs.	'000 lbs.	No.	'000 lbs.	'000 lbs.
Maritimes	—	—	—	6	2,564	427
Quebec	43	35,849	834	44	101,402	2,305
Ontario	30	39,042	1,301	35	77,308	2,209
West	10	6,796	680	10	5,492	549

Table 11.—Plant distribution by production of plants reporting the manufacture of dry skim milk, Quebec and Ontario, 1953 and 1958

Output	1953			1958		
	Number of plants	Per cent of total production	Average output	Number of plants	Per cent of total production	Average output
'000 lbs.	No.	-per cent-	'000 lbs.	No.	-per cent-	'000 lbs.
			-Quebec-			
0-499	23	12.7	189	12	3.4	295
500-999	6	12.1	688	6	4.0	669
1,000-1,499	5	17.8	1,220	6	6.9	1,168
1,500-1,999	5	25.4	1,741	3	5.0	1,682
2,000 or more	4	32.0	2,739	17	80.7	4,811
			-Ontario-			
0-499	12	6.3	205	9	2.8	239
500-999	4	6.4	620	4	3.6	704
1,000-1,499	4	12.5	1,225	4	6.3	1,213
1,500-1,999	4	16.8	1,642	3	6.5	1,665
2,000 or more	6	58.0	3,773	15	80.8	4,166

evenly distributed among the eastern, southern and western districts, with the remainder located in the central part of the province. Four maps have been drawn to depict the changes in the concentration of production within Quebec and Ontario between 1953 and 1958.

Summary.—A review of the data shows that increases in the production of both dry skim milk and evaporated whole milk between 1953 and 1958 were achieved by fewer plants producing a greater average output. Both the number of plants and the average output of plants manufacturing dry skim milk increased during 1958; most of these additional plants produced 2.55 million pounds or more per plant. Though the increase in average output was not general throughout the country, the gains made in Quebec and Ontario more than offset the declines in other regions. The data also reveal that a large number of plants manufacturing dry skim milk, especially in Ontario and Quebec, also made butter. For these plants as a group, butter production increased in proportion to dry skim milk production. The other plants, which did not make butter, manufactured one or more other products such as ice cream, cheddar cheese, fluid milk and whole milk products.

PUBLICATIONS OF THE ECONOMICS DIVISION

Federal Agricultural Legislation in Canada, 1959 Supplement. Ottawa, January 1960. pp. i + 107-115.

The fourth supplement to Federal Agricultural Legislation in Canada, 1954.

A Study of Vegetable Production and Marketing in Saskatchewan. Vick, K. I. Ottawa, January 1960. pp. 32 + iii.

This study is generally concerned with some aspects of commercial vegetable production and marketing in Saskatchewan and more specifically with the production and marketing practices of 42 commercial vegetable growers in the same province.

Marketing Boards in Canada, 1958 National Summary. Drayton, L. E. Ottawa, February 1960. pp. 7.

The second in a series of annual reports on provincial agricultural marketing boards in Canada. It describes the nature of their operations and supplies statistics on the number of marketing boards, the number of producers marketing farm products under marketing board plans and the value and proportion of agricultural marketing under marketing board plans.

A Review of the Rural Development Program in the United States of America. Report of Delegation of the Canada Department of Agriculture to the Special Committee of the Senate on Land Use in Canada. Ottawa, February 1960. pp. ii + 78.

In 1959 the Special Committee of the Senate on Land Use in Canada recommended that the Federal Department of Agriculture "send a delegation to the United States to study and report on the Rural Development Program". The four-man delegation visited different parts of the United States from September 15 to October 21, 1959 to study and appraise the U.S. Rural Development Program "in the light of the small farm or low income farm problem in Canada".

The delegation's report gives a brief outline and interpretation of the fundamental objectives of the program, describes its beginning, organization and development as well as development activities in seven different States, and appraises its achievements under the following headings: Emphasis on total area development; Redirection and refashioning of government services; and Team effort of local people. Four Appendices complete the report: Appendix A—Itinerary and General Program of the Delegation; Appendix B—Public Law 360—84th Congress, Chapter 798—1st Session, S. 2098; Appendix C—Federal and State Relationships in Agricultural Education, Research and Extension; and Appendix D—Bibliography.

OTHER PUBLICATIONS

Saskatchewan, 1958 Farm Business Summary of 22 Farm Management Clubs, 290 Club Members. Brown, J. A., H. D. McRorie and J. J. Jeanneau. Farm Management Division, Agricultural Representative Branch, Saskatchewan Department of Agriculture. Extension Report No. 1, Part I. Regina, Saskatchewan. June 1959. pp. 27.

A report based on an accounting project carried on by 21 Agricultural Representative farm management clubs and farmers in the vocational agriculture program of the Kindersley area of Saskatchewan. The main purposes of the accounting project are:

"1. To establish a simple system of farm records that would be adequate for both income tax filing and farm analysis.

2. To gain a better understanding of the nature of the farm business and its costs and returns characteristics.

3. To establish standards of efficiency and performance for use in appraising the soundness of a farm and its various components, for planning farm improvements and to use in budgeting.

4. To serve as a basis for much of the farm management club work".

A Budgetary Analysis of Large Scale Milk Production. A Preliminary Investigation into the Feasibility of Organizing a Cow Pool in Manitoba. Agricultural Economics Bulletin No. 2. Daciw, M. Dairy Branch, Manitoba Department of Agriculture and Conservation, under the direction of the Department of Agricultural Economics and Farm Management of the University of Manitoba. Winnipeg, Manitoba, July 1959. pp. vi + 40.

An inquiry into the feasibility of organizing and operating a cow pool. It is especially concerned with methods of coordinating efforts of small-scale fluid milk producers so as to derive maximum gains from new production and marketing techniques; it also proposes the establishment of an "enterprise organization" that would help farmers increase their incomes while retaining their independence as farmers.

Measurement, Definitions and Theories. Churchman, C. West and Philburn Ratoosh, University of California, Eds. John Wiley & Sons Inc., New York 1959. pp. viii + 274.

The contents of this book are derived from a symposium on management given at the December 1956 meetings of the American Association for the Advancement of Science. The symposium being designed to present contrasting approaches, the essays were prepared by scientists from different disciplines: philosophy, physics, mathematics, psychology, economics and sociology.

The book itself is divided into four parts: *Some Meetings of Measurement; Some Theories of Measurement; Some Problems in the Physical Sciences; and Some Problems in the Social Sciences.*

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

A. H. TURNER, Director

JUNE 1960 **Vol. XXX No. 3**

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ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production[e]
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
	1935-39=100							1949=100		1949=100
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	221.8	169.2	274.5	244.0	259.9	213.0	125.1	122.1	153.0
1959	230.6	219.6	167.6	271.6	240.8	269.5	219.1	126.5	121.1	165.4
1959										
Jan	229.9	221.2	163.6	278.7	246.1	260.4	218.2	126.1	122.3	159.6
Feb	230.9	218.3	162.7	274.0	244.0	....	....	125.7	121.2	162.0
Mar	230.6	216.0	162.5	269.5	241.4	....	....	125.5	120.0	161.8
April	231.2	217.3	163.5	271.0	241.1	273.0	220.2	125.4	119.3	166.2
May	231.2	222.3	173.6	271.0	243.3	....	....	125.6	118.5	165.4
June	230.6	225.4	180.2	270.6	244.3	....	....	125.9	119.1	166.1
July	231.0	226.3	179.7	272.8	246.9	....	....	125.9	119.2	164.8
Aug	231.0	222.0	169.1	274.9	241.9	275.2	218.8	126.4	120.5	164.2
Sept	230.9	219.1	161.1	277.0	239.9	....	....	127.1	122.4	168.3
Oct	230.0	215.5	163.1	267.9	236.5	....	....	128.0	124.2	171.9
Nov	230.2	217.2	165.2	269.1	233.9			128.3	123.8	166.7
Dec	229.7	215.0	166.9	263.1	230.8	....	....	127.9	122.4	169.5
1960										
Jan	230.5	214.6	171.6	257.7	229.4	266.7	221.9	127.5	121.6	173.1
Feb	230.0	212.0	172.0	252.0	226.6	....	....	127.2	120.8	170.1
Mar	229.6	213.6	175.1	252.2	226.7	....	....	126.9	119.4	170.8
April	231.3	218.3	180.5	256.2	233.7	....	....	127.5	120.9	....

Note:–See earlier editions for index numbers previous to 1926

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1957—July 1958 are final with inclusion of final participation payments for Western Wheat, announced June 5th, 1959. Subsequent indexes are subject to revision.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

(e) For a detailed description of concepts, sources and methods see D.B.S. Reference Paper (61-502) Revised *Index of Industrial Production, 1935-57.*

THE ECONOMIC SITUATION

The Budget.—In his annual financial statement, given to the House of Commons on March 31, the Minister of Finance said that government revenues for 1959-60 were estimated at $5,301 million and expenditures at $5,707 million, leaving a deficit of $406 million.

Commenting on the management of the public debt, he said:

> Public debt transactions during 1959-60 included the issue, refinancing and redemption of a large volume of government securities. However, as a result of the successful conversion loan operations undertaken during 1958 the volume of debt transactions in 1959-60 was considerably less than in the previous year.
>
> During the year now ending we have sold $1,048 million of new marketable bonds and we increased the outstanding issues of treasury bills by $530 million. In the same period we paid off $1,550 million of market issues so that the total volume of direct government of Canada marketable issues outstanding at the end of the year is only $28 million higher than at the beginning.
>
> In addition we sold $1,455 million of new Canada savings bonds and paid off or redeemed $1,170 million of earlier Canada savings bonds.
>
> After taking into account the net decrease of $20 million in bonds held in our securities investment and sinking fund accounts, the unmatured direct debt held outside these government accounts was $333 million higher at the end of the fiscal year than it was at the beginning. This compared with an increase of $1,439 million during the previous year and is an indication of the progress we have made.

External Trade.—Canada's exports were valued at $1,291.5 million for the first quarter of 1960, a 22.8 per cent increase from the corresponding quarter of 1959. Imports were valued at $1,330.2 million, a 9.3 per cent increase from the first quarter of the previous year. The import balance was thus reduced to $38.7 million from $166.2 million.

Exports to all countries were valued at $439.5 million in March 1960, or 15.3 per cent higher than in March 1959. The rise in March 1960 compared with gains of 33.5 per cent in February and 21.2 per cent in January, over the corresponding months of 1959, and continued the monthly year-to-year increases which began in September 1959. Imports rose 10 per cent to $476.4 million in March 1960, following a 19 per cent increase in February and a very small decline in January 1960.

Exports to the United States rose 18.7 per cent to $768.3 million in the first quarter of 1960, and imports 7.8 per cent to $938.3 million. Canada's import balance with the U.S. was thus reduced to $170 million from $223 million in the first quarter of 1959. Between the first quarters of 1959 and 1960 the U.S. share of Canada's exports declined to 59.5 per cent from 61.5 per cent and Canada's imports from the U.S. declined to 70.5 per cent from 71.5 per cent of all Canada's imports.

Exports to the United Kingdom rose 27.8 per cent to $209.3 million in the first quarter of 1960 and imports rose 37 per cent to $147.6 million from the first quarter of 1959. Canada's export balance with the U.K. rose to $61.7 million from $56.1 million. The proportion of Canada's exports to the U.K. increased to 16.2 per cent from 15.6 per cent and the share of Canada's imports from the U.K. to 11.1 per cent from 8.8 per cent.

Consumer Price Index.—Canada's consumer price index rose to 127.5 in April from 126.9 in March 1960 and 125.4 in April 1959. The food index rose to 120.9 from 119.4. Prices rose for bread, eggs, citrus fruits, apples, potatoes and chicken. Beef and pork prices and the prices of most imported fresh vegetables were generally lower.

Farm Prices.—Canada's index of farm prices of agricultural products (1935-39 = 100) declined to 226.3 in March from 226.6 in February 1960. Lower prices for livestock slightly offset higher prices for potatoes, poultry and eggs. The index stood at 241.4 in March and 244.0 in February 1959.

Agricultural Production.—Canada's index of physical volume of agricultural production (1935-39 = 100) was estimated at 143.6 for the year 1959, slightly below the revised index of 145.1 for 1958. The 1959 estimate is about the same as the five-year average (1954-58 of 143.7) but well below the record peak of 169.5 in 1956. Some increases were recorded for grains, livestock and dairy products in 1959 but they were not large enough to completely offset the declines for most other agricultural products.

Farm Cash Income.—Canadian farmers received about $2,786 million in 1959 from the sale of farm products, participation payments on previous years' grain crops, net cash advances on farm-stored grains, and deficiency payments made under the agricultural stabilization program. This amount is only slightly lower than the $2,813 million received in 1958 and the all-time peak of $2,859 million in 1952.

Income from the sale of livestock and animal products was slightly lower than in 1958 but returns from the sale of field crops remained at about the same level. Farmers of western Canada also received, in 1959, supplementary payments totaling $22.1 million, mainly payments under the provisions of the Prairie Farm Assistance Act. The supplementary payments made in 1958 had totaled about $60 million; in addition to P.F.A.A. payments they had included most of the $40 million distributed under the Western Grain Producers' Acreage Payment Plan.

Returns from field crops—including fruits and vegetables, Canadian Wheat Board participation payments, and net cash advances on farm-stored grains totaled $997 million, compared with $996 million in 1958. Income from wheat declined by $13 million to $422.3 million, and income from oats by $7 million to $22.1 million; marketings of both wheat and oats were smaller in 1959 than in 1958. A lower output of fruits in 1959 led to a lowering of total cash income to $35.8 million from $43.8 million in 1958. On the other hand, larger returns were realized from C.W.B. participation payments, net cash advances on farm-stored grains and sales of flaxseed, barley, potatoes and tobacco. Markedly higher marketings of flaxseed were combined with higher prices. Increases in potato prices more than offset a decline in marketings.

Farmers received about $1,750 million from the sale of livestock and animal products in 1959, only a little less than in 1958. Marketings of cattle and calves were smaller and income from this source declined by about six per cent to $574.9 million. Farm prices of cattle and calves were generally higher than in 1958; in the last quarter of the year, however, cattle prices generally declined to slightly lower levels than in the last quarter of 1958. The drop in marketings is largely attributable to a softening of the United States market for live cattle and a continued build-up of beef cow numbers, on Canadian farms.

Lower returns from the sale of cattle and calves were partly offset by higher returns from the sale of hogs. Returns to hog producers rose to $343.9 million in 1959 to $325.1 million in 1958; large increases in marketings in 1959 more than outweighed a marked decline in average prices.

Income from dairy products rose to nearly $515 million in 1959; this increase of about $19 million from 1958 was the result of higher prices and increased production. Returns from the sale of eggs were estimated at $139.6 million, or six per cent less than in 1958; a somewhat larger output was offset by lower prices.

CANADIAN AGRICULTURAL POLICIES[1]

The structure of Canadian agriculture and its place in relation to the national economy is in process of continuous and rapid change. About 15 per cent of our total population of 17.5 million live on farms. At the present time, of a total labor force of 6,200,000, nearly 700,000 or 11 per cent, are engaged in farming. In common with other countries experiencing rapid industrialization, the absolute and relative numbers of people dependent on agriculture for a living have declined; in the middle of the nineteen forties, 25 per cent of the Canadian population lived on farms and over one million persons worked in agriculture.

Notwithstanding this decrease in farm population, there has been a significant increase in agricultural production. Total farm area has been practically stable for the past two decades at about 174 million acres, but there has been a modest increase in the area of improved land (about nine per cent between 1941 and 1956) coupled with a continuing trend towards larger farms. Our average farm size is now somewhat over 300 acres; in 1941 it was 256 acres. In the Prairie region, the average farm size has increased by over 100 acres; from 440 acres in 1941 to 550 acres per farm today. Capital investment is another useful measure of size and adjustment. In 1950 the average capital invested per farm was estimated at $13,000 for all of Canada. In 1958 the average investment was $20,000, an increase of over 50 per cent. Trends in output are less easy to discern because the figures reflect to a very considerable extent seasonal conditions; generally speaking we can say that agricultural production is about 30 to 40 per cent higher than in the 1935-39 period.

In monetary terms, agriculture in 1948 accounted for 20 per cent of the net value of production of the main industry groups and in 1957 nine per cent. The change in the relative importance of agriculture has been due to the increase in value of production of other sectors of the economy, notably manufactures, mining, forestry and construction. Agriculture income, although it has shown very considerable year to year variations due to changes in the levels of output and prices, has on the whole been relatively stable. In relation to national income, farm net income is equivalent to about five per cent of the total.

In the important area of trade, the annual value of agricultural exports has averaged about $1 billion over the past 15 years and is now somewhat less than one-quarter of our total value of exports. On a value basis, about 28 per cent of our agricultural production is exported. The value of imports of agricultural products has followed an upward trend, from less than $300 million in 1945 to about $700 million in recent years, now representing about 12 per cent of the total value of imports.

Canada's main markets for agricultural products are, in about equal importance, the United Kingdom and the United States. Exports to these two countries account for about 60 per cent of the total value of our exports. Our main source of imports is the United States, from which we draw, on a value basis, more than half our imports of agricultural products.

To round out the picture, some indication of what we produce, what we export and what we import may be helpful. The range of production is wide, limited mainly by the severe winters experienced over practically the whole of Canada and the shortness of the growing season in many parts of the country. Grains are the backbone of our cropping system, with wheat occupying over one-third of the land sown to crops; next in importance, from the standpoint of acreage, are cultivated hay, oats and barley. Other grains, oilseed crops, tobacco, sugar beets, fruits and vegetables are also produced. Livestock, mainly cattle, hogs and poultry are of importance in all agricultural areas; sales of livestock, dairy products, poultry and eggs account for 60 per cent of total farm cash income.

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[1] Based on a statement made to the Committee established under GATT to consult on the agricultural policies of member governments and their effect on trade, April 1960 in Geneva. This statement was prepared by A. E. Richards, one of Canada's delegates to the Committee.

Canada's agricultural exports comprise a wide variety of items—practically the whole range of our agricultural production. Grains, particularly wheat, hold a dominant position, accounting for over half the total value of such exports. Cattle and beef, pork, flaxseed and tobacco are other exports of major importance.

Our agricultural imports comprise a number of directly competing products as well as products that for climatic reasons are not produced in Canada. Among the principal agricultural imports are fresh and processed fruits and vegetables, coffee, tea, raw sugar, raw cotton and soya beans.

Against the background of this outline of the size and nature of Canada's agriculture, we may now turn to the consideration of Canada's agricultural policies. In Canada, federal agricultural policies are determined primarily by Acts of Parliament and the Government, and are administered by government officials. Although producers or producer organizations do not have direct representation on the Agricultural Stabilization Board and other administrative bodies, they have an opportunity to put forward their views on policy matters.

A federal-provincial agricultural conference is held annually in Otawa near the end of the year, at which the ten provincial Ministers of Agriculture and leaders of farm organizations are given an opportunity to criticize and propose changes in government policy and administration. Each year national farm organizations "meet the Cabinet" and present their views and recommendations directly to the government.

The Agricultural Stabilization Act provides for a standing advisory committee of 10 producer or farm organization representatives which the Board is required to call together for consultation on price support activities at least twice in a calendar year. The Canadian Wheat Board Act and the Farm Credit Act also provide for producer representation in an advisory capacity.

Under our system of government, both federal and provincial governments may legislate on agriculture, although in the event of conflict, the federal legislation prevails. Regulation or control of international and interprovincial trade come within the federal jurisdiction. Trade within a province is a provincial matter. Within this constitutional setting, harmonious federal-provincial arrangements for agriculture have been evolved to assist agriculture and to safeguard consumers' interests. The federal government engages primarily in research and in the administration of national agricultural legislation and policies. Provincial governments are concerned primarily with extension, education and the administration of local legislation and policies. In the general field of conservation, programs are frequently financed jointly by federal and provincial governments. Our new crop insurance act provides for federal financial assistance to schemes set up and administered by provincial agencies.

The federal Government operates a wide range of measures relating to agriculture. In the field of farm credit, farmers may obtain loans at commercial rates of interest to acquire and improve property and to purchase farm machinery, livestock and other production necessities. In a number of provinces, separate provincial credit schemes are in effect.

In the field of marketing, the federal Parliament in 1935 passed the Canadian Wheat Board Act, establishing the Canadian Wheat Board as a semi-autonomous agency. Its functions have been widened from time to time so that it now has broad powers in the marketing of western Canadian grain. Other marketing activities, apart from those of a promotional nature, include the guarantee under the Agricultural Products Co-operative Marketing Act of bank loans to marketing groups and the transactions incidental to the operation of Canada's price support program.

Canada's price support program is operated under the authority of the Agricultural Stabilization Act. One of the main features of the Act, and of the programs operated under it, is flexibility. The Canadian Government is thus able to adapt its support programs to changing conditions.

Canadian support prices are linked to internal market prices and based on a ten-year moving average. For major products only top grades are supported and no support is provided for lower quality products. This serves as a strong incentive to quality improvement and limits the size of the support operation. Except for cheddar cheese and butter, the levels of support are below 100 per cent of the ten-year base price for all important products. Where anything less than a 100 per cent ratio is maintained between the effective level and the 10-year moving average, there should follow automatically a gradual reduction of the internal price which will bring it more closely into line with, or even below, international price levels.

The Canadian government is concerned with the removal of trade barriers and the expansion of trade. Over the years Canada has adhered to a liberal trade policy. With only minor exceptions, the Canadian market is open to the products of the world. The Canadian customs tariff is moderate. The most recent year for which details are available of duty collected on all imports is 1957. In that year 43 per cent of total imports entered duty free; on the remaining imports the average duty was 17 per cent. About forty per cent of agricultural imports entered Canada duty free. The average duty on the dutiable agricultural imports was about 10 per cent.

For many years it has been Canadian government policy to accord duty free entry to machines and supplies used in the production of farm products. Farm machinery, farm tractors, a wide range of farm tools and equipment, fertilizers and many other farm supplies are admitted into Canada free of duty.

Controls on imports and exports are in effect on wheat, oats, barley and certain grain products. The importation of margarine is prohibited under a provision dating from the beginning of the century.

Import restrictions have been instituted for butter, cheddar cheese, dry skim milk and turkeys to protect price support operation on these products. Average annual imports during the five years before price support and import control were: butter, four million pounds; cheddar cheese, one million pounds; dry skim milk, three million pounds; and turkey meat, eight million pounds. The annual average import value of these products was about $7 million. Apart from these restrictions, the federal government has kept the Canadian market open to the world on a freely competitive basis.

During the past two years, the Canadian Government removed or relaxed price supports and import controls on a number of products. Supports were removed entirely from fowl and dry skim milk. Support levels were lowered on turkeys, hogs and soybeans, as well as on wheat, oats and barley in Ontario. Import quotas were removed on fowl and enlarged for turkeys. Recently changes have been made in the hog and egg programs which are designed to bring production more into line with foreseeable demand, while assuring reasonable returns to producers. Under the new arrangements, the Agricultural Stabilization Board no longer supports the hog and egg markets through an offer to purchase at the support price. Producers now sell their product to the best advantage and will receive a deficiency payment at the end of the marketing year if the average prices they realize are below the support price levels. In order to discourage excessive production, deficiency payments to each producer will be limited to a specified quantity of top grade production. For example, only Grade A Large eggs are eligible for a deficiency payment to a maximum for each producer of 4,000 dozen in the year.

The wider nature of the problems involved is recognized particularly in relation to the one-third of Canada's farmers whose output is so small that, under any conceivable price structure, they cannot receive adequate income.

In a public address in October 1959, the Minister of Agriculture said, "With the rapid increase which has taken place in the world's population—an increase which last year for the first time since the second world war was greater than the increase in the production of food—I look forward to the time in the future when support price programs will no longer be necessary, and the emphasis once again will be on increased production, rather than on marketing expedients and holding production down to the amount which can be marketed." This statement gives some indication of the long range view of the Canadian Government with respect to the price support program.

THE DEVELOPMENT AND ORGANIZATION OF THE ONTARIO CHEESE PRODUCERS' MARKETING BOARD

M. M. Roytenberg

A. Early Organization of the Ontario Cheese Industry

The first cheese-makers of Ontario were the early English settlers who made cheese for home consumption. Their importance as cheese-makers, however, quickly declined with the establishment of cheese factories. The first one was established in 1864 and by 1867 Ontario already had close to 300 factories.

These factories were privately-owned but their owners did not take possession of the manufactured cheese. Suppliers of milk received the full sale price of the cheese sold less a fixed fee per unit of cheese in return for its manufacture. Co-operative cheese factories, however, were not long in developing, especially in Western and Central Ontario. In many instances co-operative control and eventual ownership of cheese factories developed. However, factories of the proprietary type remained the most numerous.

Cheese was sold at the factory in the early days but some producers thought that this method of marketing had serious disadvantages. Buyers allocated districts among themselves so that, within a district, producers could generally expect only one individual to appear with offers to buy cheese from the factories. The producers' distrust for this lack of competition was further aroused by the fact that the grade, according to which payment was made, was determined entirely by the buyer.

To overcome these disadvantages, producers in the vicinity of Ingersoll organized the first cheese board in Ontario, in 1873. Their example was soon followed in many other centres. The cheese board formed in Belleville, Ontario, emerged as the major market and the prices established there were used as a basis for pricing in many centres throughout the province.

These early boards brought buyers and sellers together, at regular intervals, but private dealings continued to take place. A later development was the introduction of a bulletin board on which all offers were recorded. The use of the auction method of sale by Cheese Boards began in 1892.

The boards were not entirely satisfactory to the producers. Some of their practices tended to weaken buyer competition. Some buyers contracted with cheese factories for their total output at the ruling price established weekly by the local boards. Factories, anxious to avoid the marketing costs involved in selling through the boards, entered into such an arrangement. Board revenues were reduced and some boards had to cease operating. The reduction in the number of boards made it possible for a small number of buyers to influence prices. The practice of "curb selling", by which dealers made it their habit to conduct most of their business after the local board had closed, also weakened producer confidence in the boards.

Other factors also played a part in the decline of the local cheese boards. For example, the establishment of concentrated milk plants in cheese-producing areas, with the consequent decline in the production of cheese, reduced the importance of some boards. In addition, an attempt was made by the United Dairymen's Co-operative, in the 'twenties, to institute a province-wide co-operative marketing scheme. Had it been successful, local boards would have become unnecessary. Diminishing confidence in the boards encouraged marketing through a co-operative. This co-operative constructed warehouses in Montreal, Belleville and Kingston and operated as a central selling agency. Under its auspices, federal government-supervised weighing, handling and grading, was instituted. Compulsory grading of export cheese was introduced by the federal government in 1923.

In 1933, the cheese-milk producers of Eastern Ontario formed the Ontario Cheese Factory Patrons Association. Its aim was the reorganization of the boards to increase their usefulness and to stimulate greater competition at auctions in areas in which the boards operated. The Association wanted to channel all cheese through local boards. The success of its efforts depended on the voluntary co-operation of individual producers and of the buyers who were represented on the boards. However, these attempts were not very successful.

B. Marketing Board Enabling Legislation

In 1934, after the hearings of the Royal Commission on Mass Buying and Price Spreads, farmers of Canada clamored for legislation that would remedy a situation which, they claimed, forced the industry to bear a disproportionate share of the burden of the economic depression[1]. As a result the federal government passed the Dominion Natural Products Marketing Act in 1934. This Act made provision for the delegation to producer groups, by the federal government, of the authority to control all marketing of their products. The Ontario Cheese Patrons Marketing Association introduced a scheme, under this legislation, in 1935, which forced the marketing of all cheese produced in Eastern Ontario through the local cheese boards in that area. However, no action was taken under this scheme, except on a voluntary basis, because the federal legislation was successfully challenged in the courts.

The British North America Act sets out the powers and areas of responsibility between the provincial and federal governments. Litigation concerning the constitutionality of the federal legislation eventually brought the matter before the Privy Council in England. According to the interpretation of the British North America Act made by the Council in 1937, the federal government could not grant control of product marketing within a province. The granting of such a control was an invasion of provincial jurisdiction. The Natural Products Marketing Act was therefore disallowed.

After the failure of the federal attempt to give producers' groups full control over the marketing of their products, some provincial governments enacted measures patterned after legislation implemented in British Columbia. The B.C. Natural Products Marketing Act, successfully tested in the Supreme Court of Canada, gave producers this control within the province concerned. It became the model for interested provincial governments because it indicated the area of provincial jurisdiction in the matter of marketing boards, and their powers. The Ontario Farm Products Control Act, enacted in 1937, was the

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[1] Farrell, M. W., "Experience with Provincial Marketing Schemes in Canada", *Journal of Farm Economics,* November 1949, pp. 610-626.

Ontario counterpart of the B.C. Act. The Ontario Cheese Producers' Marketing Scheme, which came into effect in the same year, was the first scheme approved under the legislation[1].

The operation of the Scheme allowed the producers' Marketing Board to enforce the marketing of all cheese produced in Ontario through the local cheese boards. This power, and the authority to levy tolls on producers' cheese, were delegated by the Ontario Farm Products Marketing Board[2]. All buyers and cheese-milk producers were licensed by the provincial Board.

Further development of legislation in this area occurred after World War II. The Ontario Farm Products Marketing Act, 1946, granted to producer groups, acting under marketing board legislation, the authority to establish central selling agencies for their products, if they so desired. These powers were effective only within the province. To permit extension of this control in interprovincial and export trade, the Agricultural Products Marketing Act, (Canada), 1949, was passed by the federal government, extending the powers granted by provincial legislation.

C. The Ontario Cheese Producers Marketing Board

1. **The Ontario Cheese Producers Association.**—The Ontario Cheese Producers Association is an organization made up of county associations of cheese producers. Each county group elects five representatives to a District Cheese Producers' Committee[3]. Each of the six District Committees in Ontario elects a representative to serve on the Ontario Cheese Producers' Marketing Board for a three-year term. The terms of the district representatives are staggered so that only two committees hold elections for the Marketing Board each year and this ensures the presence of experienced individuals on the board. The board itself elects one member-at-large from the membership to serve for a one-year term. The Marketing Board chooses a chairman from among its members and this individual has in the past automatically been the president of the Ontario Cheese Producers' Association.

Until 1957 the administrative costs of the Board and the Association were financed by a fee of five cents per hundredweight, levied on cheese produced in Ontario. In 1957 this fee was raised to ten cents per hundredweight. Twenty-five per cent of the amount thus collected is redistributed to the respective county associations to meet their financial needs.

The Association acts as the medium through which the views of the general membership are expressed with regard to the policies of the Marketing Board. From time to time, the executives of county associations are invited by Association officers to attend meetings at which Board policies are reviewed and explained.

2. **The Powers of the Ontario Cheese Producers' Marketing Board.**—The Board has been delegated the authority to license buyers and cheese-milk producers or to deny licenses, subject to appeal. For producers, this authority has meant a fee on cheese production (ranging from one-half to three cents a pound) used chiefly in recent years to finance an equalization of producer returns from board sales on the domestic and export markets. The Board may request information regarding cheese production and marketing from the factories and buyers. It can control the time and place of cheese auction and the quantity and

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[1] Since 1954, the Ontario Cheese Producers' Marketing Board has operated under the Ontario Milk Industry Act. The aim of this Act was to place the entire provincial dairy industry under one piece of legislation.

[2] Perkin, G. F. "The Ontario Marketing Boards", *Journal of Farm Economics*, November 1951, pp. 976-979

[3] In addition to the five representatives to which all counties are entitled, each county group is allowed one additional representative to the District Committee for every million pounds of cheese, in excess of 4.5 million pounds, produced yearly.

quality made available for sale. All cheese must be sold through the cheese boards, or exchange, as they have been called in recent years, and all payments to producers must be made through the board.

During the years from 1937 to 1950 the operations of the board were limited because it had legal jurisdiction only over the cheese sold within the province. In that period 80 per cent of the cheese moved outside the province and 60 per cent of this cheese was exported abroad. However, measures were taken to improve competitive bidding by compelling the marketing of cheese through regular auctions. (There are now only two auctions, one at Stratford and the other at Kingston).

Emergency war measures also prevented the active operation of the board. During and after World War II the requisitioning of cheese at a fixed price, to fulfill overseas contracts, prevented the introduction of any changes in the marketing procedures of the Ontario Cheese Producers' Marketing Board. This situation continued until 1950.

In 1951, on the basis of authority granted after World War II under provincial and federal legislation (the Ontario Farm Products Marketing Act, 1946 and the Agricultural Products Marketing Act (Canada), 1949), a marketing agency was established with the power to control the movement and sale of Ontario cheese beyond provincial boundaries. (The Ontario Act granting provincial authority became the Ontario Milk Industry Act in 1954).

3. **The Selling Agency.**—In 1951, the Ontario Cheese Producers' Association Ltd. was designated as the Marketing Board selling agency. Its membership consisted of the president and vice-president of the Ontario Cheese Producers' Association, and three regional representatives elected by county association presidents and delegates. In 1952 five additional members were added to represent the five districts into which the province had been divided. The selling agency was reorganized in 1956, as a co-operative, when the Ontario Co-operative Loans Act was amended to prohibit the further lending of public funds to limited companies. The selling agency then became the Ontario Cheese Producers' Co-operative Ltd. The membership of the Co-operative is limited to individuals on the Marketing Board.

The selling agency is given authority by the Board to control the conditions of sale and distribution of cheese. Cheese offered for sale but not receiving bids acceptable to the producer or factory concerned can be sold to the selling agency. The seller receives an initial payment, with further payments dependent on the prices at which the agency is able to dispose of all of the current year's cheese which has come into its possession. The agency did experiment in 1954 with the role of an active bidder at the auctions but, as a result of strong buyer protests at that time, the agency continues to acquire only cheese which has been left unsold at prices acceptable to sellers or at the negotiated minimum price. (Minimum prices are negotiated by a committee of five buyers and five board members, with provision made for arbitration).

At its inception in 1951, the selling agency provided for the reduction of the existing 19 Cheese Boards to six auctions located at Belleville, Brockville, Cornwall, Kemptville, Vankleek Hill, and Stratford. These auctions were thereafter referred to as exchanges. In 1956 the five Eastern Ontario exchanges were amalgamated into one at Kingston. The "Dutch Auction"[1] method of selling was also introduced at the same time, in this centre, as a means of stimulating competitive bidding. The Stratford exchange in Western Ontario continues to operate using the conventional auction method.

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[1] Under the "Dutch auction" system buyers sit at desks which have electrical connections with a dial showing cheese prices A hand on the dial is set at a price higher than current market prices. When started the hand proceeds slowly downward. Its descent is halted by the first buyer to press the button on his desk, his desk number then being indicated on the dial. This buyer acquires the lot of cheese in question at the price specified on the dial.

The maintenance, by the selling agency, of minimum negotiated prices at the cheese auctions has been facilitated by the provision of producer-controlled storage facilities. With a grant of $450,000 from the provincial government, and subsidies of $192,000 provided under the federal Cold Storage Act (1952), the Marketing Board constructed a public cold storage warehouse in Belleville during 1951-52 and additional cold storage facilities at Winchester in 1955-56. Together, these storages have a capacity of about 10 million pounds of cheese. These facilities were built to enable the agency to dispose of large supplies of cheese in an orderly manner.

Aside from the attempt to encourage competitive bidding at cheese auctions, the agency, acting for the Board, developed a two-price system in the marketing of Ontario cheese. To dispose of its cheese when the supply is greater than the demand at the established minimum price, the producer organization was prepared to finance, (with both federal and provincial government assistance), the export of cheese to the United Kingdom at prices lower than those prevailing in Canada. With the proceeds of levies on all cheese sold it was possible to make additional payments to producers whose cheese had been exported, and thus enable the selling agency to bring returns, to these producers, to the same level as for cheese sold domestically. This measure reduced supplies on the domestic market and helped maintain higher prices for Ontario cheese in the domestic market than was otherwise possible.

CONCLUSION

During its most active years, from 1951 to the present day, the Ontario Cheese Producers' Marketing Board has controlled the marketing of about 549 million pounds of cheddar cheese. The administrative cost of the Board's operations to Ontario cheese producers during this period amounted to $343,000[1], about six cents per hundred pounds of cheddar cheese produced in Ontario and marketed by the board. The major portion of the remainder of levies was returned to the producers in the form of equalization payments.

The area of co-operative organization in the Ontario cheese industry has been extended, through the operations of the Ontario Cheese Producers' Marketing Board, beyond the manufacturing process, to include the domestic and international marketing of Ontario cheddar cheese. With federal and provincial government assistance, producers have been enabled to improve their bargaining power in the market and operate a two-price system out of producer financing of export shipments as well as by the provision of co-operative storage facilities to hold temporary excesses of supply. The producers of milk for the manufacture of cheddar cheese in Ontario have benefited materially from these developments.

A LOOK INTO FARM LIVING COSTS

Frank Lawrence

Living costs are generally considered to be lower in farm than in urban homes. Opinions, however, differ greatly as to the amount by which living costs may be lower in the farm home, and the comparative importance to be given to the various cost components in the farm and in the urban homes. Urban wage-earners, for example, are likely to give more weight than farmers to food and shelter in their estimates of total living costs. We have very little information in Canada, on the exact, and even on the approximate difference between farm and urban living costs. This article provides some data, from a sample of dairy farms, for comparing these costs.

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[1] This amount does not include export subsidies paid to the trade to encourage shipments to the United Kingdom during 1956 and 1957. Rebates of 0.45 cents and 1.75 cents a pound, at a total cost of $14,093 and $44,542, were paid to exporters during certain periods in 1956 and 1957 respectively.

People working at non-farm occupations usually receive their wages entirely in cash. A great part of this cash income goes to pay for food and shelter. Many of these people own a home on which they pay taxes and insurance, based on an urban valuation, and meet cash expenses to keep it in good condition. Others pay rent to live in an apartment or a rented house. They all buy food at urban retail prices.

The farmer's income, on the other hand, comes in two forms; in cash from the sale of farm products and from work off the farm, and as income in kind from the use of the farm house and from the products raised or grown on the farm and consumed in the home. There can be no disagreement on the dollar value of the cash income but the income in kind, or farm perquisites, is usually valued at farm prices rather than at consumer or retail prices.

Farm and Urban Income Comparisons.—Meaningful comparisons of farm and urban incomes require specific definitions of these incomes. One comparison is based on the returns to labor, measured by the "labor earnings" of the farm operator and the income of the industrial wage-earner. (Popular comparisons of the "farmer's income" and "incomes in industry" vaguely resemble this comparison). The farmer's "labor earnings" normally includes produce perquisites valued at the opportunity cost to the farmer, which is usually the farm price of the produce, and the value of the dwelling as a perquisite at some nominal rental value. These earnings do not include the personal use of the farm family car as a perquisite component.

Inter-occupational income comparisons are more significant when related to living costs and levels of living. Recipients of low and high incomes may well achieve the same level of living if the living costs are lower for the former group. Assuming the same level of living, living costs are lower for farmers than for urban residents by the difference between the farm production costs and the retail prices of the farm perquisites. This difference is neglected in the usual income comparisons.

Methods and Assumptions.—Knowledge of the levels of living is required for a meaningful comparison of farm and urban living costs. For the comparison made in this article, it is assumed that the urban and the farm levels of living are equal with respect to the main components such as dwelling, diet, automobile, household furnishings, social life, entertainment, health facilities, etc. Thus, the difference in living costs for farm and urban families will exist only in the farm perquisites. This assumption eliminates any adjustments otherwise required to obtain comparability of levels of living, enables the use of the actual level of living found on the farms, and avoids the need to use the whole living expenses budget of the farm family. Another minor assumption, of course, is that the non-perquisite items used by the farm families are purchased at urban retail prices.

The methods employed in "costing" the perquisites also affect the difference in living costs. If "opportunity costs" are used, the perquisites are evaluated at farm selling prices and the difference in living costs depends on the difference between these prices and the urban retail prices. If the perquisites are evaluated at their actual cost to the farmer, then the difference in living costs is increased by the margin between the farm production costs and the farm selling prices.

The opportunity cost, that is the farm selling price, of the produce perquisites is readily available, but no such price exists for the dwelling. Normally, it can be sold only as a part of the farm unit. Under this condition, however, a "residual" value for the dwelling can be estimated as a percentage of the difference between the total real estate value and the bare land value. The other value that can be put on the house is the "real cost" to the farmer, consisting of the lifetime maintenance cost and the original cost of the house. If the original cost is not known by the farmer, then some difficulties arise in estimating this cost. In both cases, the evaluation of the dwelling as a perquisite is reduced to an annual value.

Urban dwelling costs may be considered in terms of either the annual cost incurred in owning a house or the monthly payment required in renting similar accommodations. The difference between the costs of owning and renting a house is the amount of the landlord's profit. For the purpose of comparing urban and farm dwelling costs, it is assumed that the farm dwelling is owned. All comparisons are made for the same period of time, either for a year or for a month.

Evaluation of the farm dwelling was made from information obtained from each farm operator in the sample. It should be noted that this evaluation of the farm dwelling does not necessarily coincide with that of the usual farm business study wherein a monthly rental value is allowed for the dwelling. The value of urban dwellings was established from a judgment sample of prices in urban localities within or adjacent to the sample area. These prices were obtained from real estate agencies, advertisements, etc. for urban houses that were comparable to the farm houses in construction, age and condition. Retail prices of farm produce perquisites were obtained in these same urban localities.

Cost of Living.—The expenses involved between production on the farm and consumption in the urban home may be regarded as the approximate difference between farm and urban food costs. The farmer makes at least a hypothetical saving equal to the margin between production cost and farm sale price and between this price and the retail price.

Estimates of farm business income are valid for income comparisons among farms but have far less value for income comparisons between farming and other occupations. The usefulness of such estimates for the latter purpose is limited by the inclusion of returns to capital in farm income and the difficulties and variations in the methods of estimating the value of farm perquisites. In comparing farm and non-farm living costs, the value of the farm perquisites should be considered in relation to the commercial returns provided to the farm business and their worth to the farmer as a breadwinner, at the average consumer prices paid by wage-earners in other occupations.

Description of Sample Farms.—In this article, estimates of the reduction in farm living costs that stems from the use of farm perquisites are derived from a business study of a selected sample of 100 dairy farms located in eastern Ontario. All farms in the sample were family-operated and most of them were operated by the same farmers in 1957 as in 1948. These farms were selected in each of the nine most easterly counties of Ontario, according to the prevailing sizes of dairy farms, the chief methods of milk production, and the market outlets for milk. They can be classified into two main groups: a larger group consisting of factory milk farms selling milk and cream to processing plants, cheese factories and creameries, and a smaller group of farms supplying the fluid milk market under quota and a premium price.

In 1957, the average capital investment was about $20,000 per farm for the factory milk farms and close to $38,000 for the fresh milk farms. Operating units averaged 208 acres and 20 milking cows per factory milk farm, and 289 acres and 30 milking cows per fresh milk farm. Ten years earlier, the milking herd was 25 per cent smaller on both groups of farms and the acreage operated was 12.5 per cent and 24 per cent smaller on the factory milk farms and the fresh milk farms, respectively.

Sales of milk and other farm products averaged about $5,900 on factory milk farms and nearly $11,900 on fresh milk farms in 1957. The value of farm produce retained for household consumption was much the same for both groups of farms, but it was equal to 6.6 per cent of the total farm sales on factory milk farms compared with 3.3 per cent on fresh milk farms (Table 3).

Family farm earnings, in 1957, averaged $2,277 on factory milk farms and $4,657 on fresh milk farms. This represents the interest on farm investment as well as the wages to the operator and his family for 17.1 months of labor per factory milk farm and 17.5 months per fresh milk farm (Table 1).

Use of the Farm Dwelling.—Dwellings on the 100 dairy farms studied in eastern Ontario were generally spacious and kept in good repair. The homes on one-third of the factory milk farms and on more than half of the fresh milk farms were constructed of stone or brick. The residual value of the farm dwelling, in 1957, averaged about $3,100 on factory milk farms and about $5,600 on fresh milk farms. Annual costs of farm housing, including cash costs and depreciation, amounted to $210 on factory milk farms and $257 on fresh milk farms.

The market value of 1957 of comparable urban houses and lots was $7,300 for the houses on factory milk farms and $12,800 for those on fresh milk farms. Including cash costs and depreciation, the total annual costs of owning these urban houses were $487 and $599. To provide for a return of four per cent on the market values, the annual rental costs were $778 and $1,113.

Thus, the farm operator had an advantage over the urban wage-earner in annual housing costs. Compared with the owner of an urban house, this saving amounted to $277 for the factory milk farmer and $342 for the fresh milk farmer. If the urban resident rented a house, the housing costs of the respective farm operators were lower by $568 and $856 (Table 2).

Table 1.—Farm Business Summary, 100 Selected Dairy Farms, Eastern Ontario, 1947-48 and 1956-57

	1947–48			1956–57		
	72 factory milk farms	28 fresh milk farms	All 100 farms	72 factory milk farms	28 fresh milk farms	All 100 farms
A. Livestock per farm:						
1. Total productive animal units	29.5	35.0	31.0	32.5	45.0	36.0
2. Number of milking cows	16	23	18	20	30	23
3. Total number of cattle	34	42	36	39	56	44
B. Land per farm:						
1. Acres owned	173	194	179	198	238	209
2. Acres operated	182	210	194	208	289	230
C. Labor per farm:						
1. Months of unpaid (operator and family) labor	18.3	16.7	17.9	17.1	17.5	17.2
2. Unpaid labor used in producing produce perquisites						
Months	1.19	0.67	1.00	1.03	0.56	0.82
Hours	310	175	260	267	145	213
D. Total investment per farm (dollars)	18,032	25,811	19,991	20,120	37,743	26,474
E. Average farm business summary (dollars):						
1. Gross returns from sale of farm products	4,822	7,496	5,571	5,895	11,863	7,566
2. Family net farm income (cash and inventory change)	1,458	2,788	1,831	1,558	3,787	2,179
3. Family farm earnings (return to unpaid labor and capital)	2,064	3,412	2,443	2,275	4,657	2,940

Comparative Stability of Perquisites.—Farm cash income varies greatly from farm to farm depending on management, scale of operations, and price-cost relationships in production. Income in kind, however, varies little within a particular type of farm in a given area. Families on the smaller and less specialized farms tend to use more produce than those on the larger farms, but many live in a less expensive house. The amount of perquisites used or consumed is probably determined more by social habits and family living requirements than by farm business factors. The size, age distribution and food preferences of the family have more influence on the amount of produce used in the home than the degree of specialization in farm production. The size of the dwelling, however, is more directly related to the total investment in farm real estate.

Produce Perquisites Used in the Home.—Farm households continued to use the same kinds of farm produce in 1957 as in 1948, but they had made some changes in the quantities of these foods. In 1957, dairy farm families drank more milk, ate fewer eggs, and butchered more livestock, which was stored in home freezers for current and future household use.

Fluid milk consumption averaged 1,226 quarters a year or 3.3 quarts a day per farm household in 1957, and represented 1.8 per cent of the milk produced for sale. The sale value of this milk averaged 6.9 cents a quart on factory milk farms and 8.8 cents a quart on fresh milk farms. This milk surpasses homogenized milk, selling at 22 cents a quart to the urban consumer, in freshness and butterfat content.

Table 2.—Annual Cost of Farm Houses and Comparable Urban Houses, 100 Selected Dairy Farms, Eastern Ontario, 1947-48 and 1956-57

	1947–48			1956–57		
	72 factory milk farms	28 fresh milk farms	All 100 farms	72 factory milk farms	28 fresh milk farms	All 100 farms
			—dollars—			
A. Farm house:						
1. Residual value	2,363	3,009	2,544	3,131	5,572	3,815
2. Annual cost:						
(a) Taxes and insurance	54	66	58	94	122	102
(b) Repairs and depreciation	89	91	90	116	135	121
(c) Total cash and depreciation costs	143	157	148	210	257	223
(d) Interest on residual value at 4%	95	120	102	125	223	153
(e) Rental cost	238	277	250	335	480	376
B. Comparable urban house:						
1. Market value (including lot)	4,540	6,015	4,952	7,262	12,822	8,830
2. Annual cost:						
(a) Total cash and depreciation costs	277	313	288	487	599	519
(b) Interest on market value at 4%	182	241	198	291	514	353
(c) Rental cost	459	554	486	778	1,113	872
C. Difference between farm and urban housing costs:						
1. Farm house owned, urban house owned[a]	134	156	140	277	342	296
2. Farm house owned, urban house rented[b]	316	397	338	568	856	649

[a] Item B 2 (a) minus item A2 (c).

[b] Item B 2 (c) minus item A2 (c).

Farm eggs used on these dairy farms in 1957 averaged 146 dozen for all farms and 176 dozen for those farms having an egg enterprise. The consumption of farm eggs in 1948 was 190 dozen and 206 dozen, respectively. Only 83 per cent of these dairy farms had hens in 1957, compared with 92 per cent in 1948. Eggs retained for the farm household comprised eight per cent of the total egg production on factory milk farms, and 18 per cent on fresh milk farms where smaller flocks were kept. These ungraded eggs would have brought the farmer 28.7 cents a dozen in 1957 but would have retailed at 37 cents a dozen.

Table 3.—Comparative Values of Farm Produce Used for Family Living, 100 Selected Dairy Farms, Eastern Ontario, 1947-48 and 1956-57

	1947–48			1956–57		
	72 factory milk farms	28 fresh milk farms	All 100 farms	72 factory milk farms	28 fresh milk farms	All 100 farms
A. Quantity of farms produce used						
1. Milk (quarts per farm)	1,160	1,140	1,154	1,240	1,160	1,226
2. Eggs (dozens per farm)	195	175	190	143	155	146
(dozens per egg producing farm)	204	213	206	172	189	176
B. Prices of farm produce						
1. Farm selling price:						
(a) Milk (cents per quart)	6.0	7.5	6.2	6.3	8.8	6.9
(b) Eggs, ungraded (cents per dozen)	31.4	32.0	31.6	27.6	31.1	28.7
2. Urban consumer price:						
(a) Milk (cents per quart)	15.0	15.0	15.0	22.0	22.0	22.0
(b) Eggs (cents per dozen)	45.6	47.0	46.0	34.8	40.0	37.0
C. Values of produce perquisites						
1. At farm cost[a] (dollars)	248	223	239	264	258	260
2. At farm selling price (dollars):						
(a) Milk	67	85	72	78	101	85
(b) Eggs	61	56	60	40	48	42
(c) Meat	90	51	79	79	67	75
(d) Garden and forest products	149	155	150	184	174	181
(e) Total value at farm selling prices	367	347	361	381	390	383
3. At urban retail prices (dollars)						
(a) Milk	174	171	173	272	255	269
(b) Eggs	89	82	87	50	62	54
(c) Meat	255	127	198	237	201	225
(d) Garden and forest products	268	279	270	331	312	326
(e) Total value at urban retail prices	756	659	728	890	830	874
D. Difference in value of produce perquisites						
1. At "farm cost" and "farm selling price"	119	124	122	117	132	123
2. At "farm selling price" and "urban retail price"	389	312	367	509	440	491
3. At "farm cost" and "urban retail price"	508	436	489	626	572	614
E. Farm value of produce perquisites as per cent:						
1. Of gross returns from sale of farm products	7.6	4.6	6.5	6.5	3.3	5.1
2. Of family farm earnings	17.8	10.2	14.8	16.7	8.4	13.0
3. Of urban value of produce	48.5	52.7	49.6	42.8	47.0	43.8
F. Urban value of produce perquisites as per cent						
1. Of family farm earnings	36.6	19.3	29.8	39.1	17.8	29.7

[a] Cash costs plus depreciation of machinery and buildings.

As to farm meat, 92 per cent of the dairy farmers in 1957 and 85 per cent in 1948 slaughtered livestock or poultry for their own use. The increased disparity of farm and retail prices of meat may have been responsible for this change. The farmer's share of the urban meat consumer's dollar dropped from 40 cents in 1948 to 33 cents in 1957. In other words, farmers were able to obtain their meat at a saving of 60 per cent of the retail price in 1948 and 67 per cent in 1957.

Garden and forest produce included potatoes, vegetables, small fruits, maple syrup and fuel wood. These products, requiring no fancy wrappings to keep them fresh and attractive, represented a 44 per cent discount on retail prices in urban areas.

Calculated at farm selling prices, the average value of farm produce consumed by these farm families during 1957 was $381 on the factory milk farms and $390 on the fresh milk farms. Although this produce was only a small portion of the total production of these farms, its value equaled 17 per cent of the farm earnings on factory milk farms and eight per cent of the farm earnings on fresh milk farms. In terms of urban consumer prices, the value of these products was $890 or 39 per cent of the farm earnings on factory milk farms, and $830 or 18 per cent of the farm earnings on fresh milk farms.

The farm value of all produce perquisites was 44 per cent of their value at the retail prices paid by urban consumers in 1957 and 50 per cent of their retail value in 1948. In effect, urban families paid about 2.3 times more than farm families for these products in 1957, and twice as much for them in 1948.

Cost of the Farm Car to the Household.—Some smaller savings in living costs accruing to the dairy farm families, such as buying butter at a discount from dairy plants and no expenses for commuting to work, are largely offset by the higher costs of some public utility services in rural areas. Sharing the costs of car operation between farm and personal use, however, falls into a different category, and provides for a substantial saving in farm living costs.

Table 4.—Annual Farm and Urban Costs for Personal Use of the Car, 100 Selected Daily Farms, Eastern Ontario, June 1, 1956 to May 31, 1957

	72 factory milk farms	28 fresh milk farms	All 100 farms
A. Cost factors in operation of the farm car			
1. Average market value (dollars)	1,057	1,434	1,162
2. Annual operating and depreciation costs (dollars)	477	543	495
3. Age of car (years)	5	3	4
4. Mileage driven for all purposes (miles)	7,638	9,052	8,033
5. Gasoline price (cents per gallon)	36.5	36.5	36.5
6. Miles per gallon of gasoline	19.8	20.8	20.1
7. Operating and depreciation costs per mile (cents)	6.24	6.00	6.16
B. Share of costs to personal use			
1. Mileage driven for personal use (miles)	3,329	3,162	3,263
2. Personal mileage as per cent of total mileage	43.6	34.9	40.9
3. Personal share of car costs (dollars):			
(a) Cash operating costs	148	121	140
(b) Depreciation	60	69	63
(c) Total share to personal use	208	190	203
C. Comparable urban costs, of car operation (dollars)			
1. Cash operating costs	204	193	201
2. Depreciation	135	192	152
3. Total comparable urban cost	339	385	353
4. Operating and depreciation costs per mile (cents)	10.2	12.2	10.8
D. Difference between farm and urban costs for personal use of the car (dollars)	131	195	150

Factory milk farmers covered about 7,600 miles and fresh milk farmers about 9,000 miles, on the average, in 1957. The mileage travelled for personal or household business averaged about 3,300 miles on the factory milk farms and 3,200 miles on the fresh milk farms. The household share of the car expenses, including cash operating costs and depreciation, was $203 per farm or 6.2 cents per mile. On the basis of the same mileage for personal and household purposes, the comparable urban costs for car operation would be $353 or 10.8 cents per mile (Table 4).

Comparisons of Farm and Urban Living Costs.—Estimates of the difference between farm and urban living costs were derived from the following evaluations of dwelling and produce costs:

1. Farm cost—house at cost to a farm owner, produce at farm cost.
   Urban cost—house at cost to an urban owner, produce at urban retail prices.
2. Farm cost—house at cost to a farm owner, produce at farm selling prices.
   Urban cost—house at cost to an urban owner, produce at urban retail prices.

Table 5.—Evaluations of the House, Farm Produce, and Personal Use of the Car in Farm and Urban Living Costs, 100 Selected Dairy Farms, Eastern Ontario, 1947-48 and 1956-57

	1947–48			1956–57		
	72 factory milk farms	28 fresh milk farms	All 10 farms	72 factory milk farms	28 fresh milk farms	All 100 farms
	—dollars per farm—					
A. Value of house and farm produce in farm living costs						
1. House at cost to a farm owner...	143	157	148	210	257	223
Produce at farm cost............	248	223	239	264	258	260
Total..................	391	380	387	474	515	483
2. House at cost to a farm owner...	143	157	148	210	257	223
Produce at farm selling prices....	367	347	361	381	390	383
Total..................	510	504	509	591	647	606
B. Value of house and farm produce in in urban living costs						
1. House at cost to an urban owner.	277	313	288	487	599	519
Produce at urban retail prices....	756	659	728	890	830	874
Total..................	1,033	972	1,016	1,377	1,429	1,393
2. House at cost to an urban renter.	459	554	486	778	1,113	872
Produce at urban retail prices....	756	659	728	890	830	874
Total..................	1,215	1,213	1,214	1,668	1,943	1,746
C. Saving on shelter and food in farm living costs						
1. (B 1 − A 1).....................	642	592	629	903	914	910
2. (B 1 − A 2).....................	523	468	507	786	782	787
3. (B 2 − A 2).....................	705	709	705	1,077	1,296	1,140
D. Saving on personal use of car in farm living costs.........................	no data			131	195	150
E. Total saving in farm living costs						
1. (C 1 + D).........................	....	....	....	1,034	1,109	1,060
2. (C 2 + D).........................	....	....	....	917	977	937
3. (C 3 + D).........................	....	....	....	1,208	1,491	1,290

3. Farm cost—house at cost to a farm owner, produce at farm selling prices.

   Urban cost—house at cost to an urban renter, produce at urban retail prices.

In addition, each estimate includes the difference between farm and urban costs of car operation for personal use. (Table 5).

First comparison.—The housing costs for a farm owner, consisting of taxes, insurance, repairs and depreciation on the farm dwelling, averaged $223 in 1957. These costs would have amounted to $519 for the owner of a comparable urban house. The farm produce used by the farm family during 1957, when valued at farm cost, was worth $260. At urban retail prices, these products would have cost $874. Based on these valuations, the living costs of a farm family were lower by $296 for housing and by $614 for food. Including the difference of $150 between farm and urban costs for personal use of the car, the total saving in living costs for a farm family amounted to $1,060.

Second comparison.—If the produce used by the farm family had been sold at farm prices, an average of $383 would have been added to farmer's cash income. However, the urban retail value of these products was $874, so that the farm family still obtained a reduction of $491 in living costs through the consumption of food produced on the farm. Total living costs for the farm family, in this case, were $787 less than for an urban family occupying their own house.

Third comparison.—An urban resident who preferred to live in a rented house would have paid $872, or $649 more than a farmer, in providing shelter for his family. With the produce used by the farm family valued at farm selling prices, total living costs were $1,290 lower for a farm family than for an urban family that lived in a rented house.

Conclusion.—The second comparison of farm and urban living costs provides a more conservative and realistic estimate of the lower cost of country living. In this comparison, farm living costs are based on the farm value of produce consumed in the home, which represents the reduction in cash income due to the consumption of food produced on the farm. Also, the urban living costs are derived on the basis of an owned house rather than the less common rented house.

Much is said about the increasing disparity of farm and consumer prices and the decline in the farmer's share of the consumer's dollar. But this disparity of prices is a benefit to those farmers who depend on perquisites to supplement their living. For example, the dairy farmers in this study saved 56 per cent of the urban retail cost of the farm products that were consumed in their homes during 1957. It would follow that any widening of the gap between farm and retail food costs provides farmers with a greater incentive to depend on income in kind. This may be one of the reasons for the persistence of many family farms that long ago were noted as uneconomic.

APPLE PROCESSING IN NOVA SCOTIA

G. C. Retson

Most of the apples grown in Canada are sold as fresh fruit. Over the past 20 years, however, the quantity of apples sold to processors has increased greatly; it is now more than double that of prewar years and accounts for about one-quarter of the crop.

Probably the most significant aspect of apple processing in Nova Scotia is the high percentage of the total crop marketed in this form. During the 1954-58 period processors handled 63 per cent of the apple crop in Nova Scotia and only 12 per cent in Quebec, 21 per cent in British Columbia and 39 per cent in Ontario.

The expansion of processing in Nova Scotia was influenced by such factors as the loss of overseas markets and increased competition on domestic markets. Also, the quality of some apple varieties grown in the province is more suitable to processing than to fresh fruit.

Apple processing in Nova Scotia.—Before World War II, about one million bushels or 20 per cent of the Nova Scotia apple crop was processed (Table 1). With the loss of overseas markets for fresh fruit during the war an increased volume of apples was diverted to processing plants. This diversion reached a peak in 1944 when 3,984,750 bushels or 76 per cent of the crop was processed.

During the war processing was generally regarded as a temporary measure which would eventually give way to the resumption of overseas shipments. Postwar extension of controls, however, restricted overseas shipments and processing continued to provide the major market for the crop. In each year except 1949, when subsidized shipments of fresh fruit were sent to Great Britain, about one-half to three-quarters of the crop was processed annually.

In recent years the volume of processed apples has varied considerably depending on the availability of fresh fruit markets, the demand for processed products, and the effect of weather and other natural hazards on total production of apples. The percentage of the crop processed annually, however, has not changed appreciably (Table 1). The above-average percentage in 1954 was due largely to a special program for processing windfalls caused by "Hurricane Edna". The decline in 1955 was caused mainly by the inclusion in the crop estimate of about 542,000 bushels of apples listed as unharvested or unsold. If calculated on the basis of the crop marketed, as in other years, 66 per cent of the 1955 crop was processed. The proportion of the total crop taken by

Table 1.—Utilization of Apple Crops, Nova Scotia, 1931-58

Period	Average or annual production	Sold as fresh fruit	Sold to[a] processors	Per cent of crop processed
	000 bushels	000 bushels	000 bushels	per cent
1931–1938	5,789	4,658	1,131	20
1939–1945	3,995	1,126	2,869	72
1946–1952	3,024	1,354	1,670	55
1953	1,087	374	713	66
1954	2,157	610	1,547	72
1955	3,250	1,135	1,800	55
1956	2,206	638	1,568	71
1957	2,918	1,177	1,741	60
1958	1,455	582	873	60

[a] Includes sales to processors outside the province.

Source: Dominion Bureau of Statistics, *Crop and Seasonal Price Summaries*, and *Inspection Reports*, Production and Marketing Branch, Canada Department of Agriculture.

processors has been exceptionally constant, especially when one considers all the conditions that determined the quantity of apples available for processing, and also the changes in orchards caused by an extensive program of tree removal and replanting to varieties favored by the domestic markets.

Statistics on the production of apples for processing in Canada are derived from records of sales to processors. Data compiled on a provincial basis do not fully indicate the relative importance of processing as a market outlet since fruit grown in one province may be processed elsewhere. Large quantities of Nova Scotia apples are frequently shipped to processors outside the province. Information on these shipments, dating back to 1949, has been included with the data in Table 1.

Processed products.—Before World War II most of the output of processed apples in Nova Scotia consisted of evaporated or dehydrated apples. The production of this product has declined since 1949 to only eight per cent of the apples sold to processors during the period from 1954 to 1958 (Table 2).

Apple juice and apple concentrate were the main processed products in the 1954-1958 period, accounting for 47 per cent of the apples sold to processors. Nova Scotia produced about a quarter of the Canadian supply of these products. However, they comprised a lower proportion of the total processed output in Nova Scotia than in Quebec and British Columbia where over 70 per cent of the shipments to processors were used for juice and concentrate.

The production of juice and concentrate, which is largely a salvage operation, varies with the available supply of low cost fruit. With one of the smallest crops on record in 1953 production was correspondingly low. Output increased sharply as a result of windfall damage in 1954 and of the heavy crop of 1955. Aside from shipments to Latin American Countries where it is consumed in increasing quantities as a beverage, nearly all apple juice produced in Nova Scotia is put in vitaminized form.

The production of canned apples, which utilizes the top processing grades, tends to be more uniform than that of other products. In the 1954-58 period 28 per cent of the apples shipped to processors in Nova Scotia were canned. Nova Scotia produced over three-quarters of the Canadian output of this product.

Included under "Other" in Table 2 are apples used for the production of vinegar, pie fill, jelly and canned baked apples. Also included are sales to processors outside the province which accounted for seven per cent of the apples

Table 2.—Sales of Apples to Processors by Type of Product, Nova Scotia, 1949-58

Year	Juice and concentrate	Canned	Dehydrated	Sauce	Other[a]	Total
			-'000 bushels-			
1949	492	311	404	71	25	1,303
1950	591	469	285	61	23	1,429
1951	336	385	141	40	69	971
1952	313	253	51	40	235	892
1953	186	256	26	45	200	713
1954	830	418	57	88	154	1,547
1955	901	411	150	38	300	1,800
1956	790	417	156	68	137	1,568
1957	707	442	204	115	273	1,741
1958	302	382	55	88	46	873

[a] Includes sales to processors outside the province.

Source: *Crop and Seasonal Price Summaries* and *Inspection Reports*, Production and Marketing Branch, Canada Department of Agriculture.

marketed through processors during the 1954-58 period. The types of product made from these apples could not be ascertained but it is reasonable to assume that these were mainly canned and frozen apples.

Returns.—In prewar years processing generally provided low returns for apples that were unsuitable for the fresh fruit trade. Processors secured a large volume of apples at prices ranging from 10 to 30 cents a barrel. During the war year the industry operated on a subsidized basis and prices varied widely according to market demand and the type of governmental support program. Reports of the Nova Scotia Apple Marketing Board from 1942 to 1949 show a range of prices for processing apples from $0.13 to $0.50 a bushel for the lower grades (ciders), and from $0.20 to $0.75 a bushel for the top grades (peelers).

In recent years, as the industry became more specialized, prices for processing apples have become more variable, reflecting the demand for various grades, sizes and varieties of apples. About half of the processed apples, or those used for the production of apple juice, concentrate and vinegar brought the lowest returns. In 1957 prices for these apples averaged about 27 cents a bushel at the farm. In 1958 the price was somewhat higher at 35 to 38 cents a bushel. Prices for apples processed into dehydrated apples and sauce were considerably higher and ranged from 44 cents to 55 cents a bushel. Aside from a small quantity of fruit used for canned baked apples, the highest prices were paid for fruit used for producing canned apples and pie fill; these ranged from 64 cents to 87 cents a bushel in the 1957-58 period.

The salvage aspect of processing limits the significance of the average returns from processing apples compared with those from fresh fruit. Moreover, the alternative of shipping to fresh fruit or processing markets implies considerably more than a comparison of prices. Processing apples are graded on delivery whereas fresh fruit remains in storage until it can be handled by the packing house. As a result the grower can expect a greater shrinkage both in grade and in volume of apples marketed as fresh fruit. Prices for processing apples tend to be lower than for fresh fruit but production costs also are probably lower. External appearance, a major factor in the quality of fresh fruit, is rather unimportant in processing. Fresh fruit also requires the maintenance and storage of a much larger supply of containers than processed apples.

Variety.—Variety played a significant part in the development of apple processing in Nova Scotia and has now become a rather critical problem. Most of the prewar production consisted of varieties adapted to overseas shipments

Table 3.—Prices Received by Growers for Fresh Fruit and Processing Apples, Nova Scotia, 1951-56

Year	Fresh fruit[a]	Group 1 canning apples ($2\frac{1}{2}$ up) and ($2\frac{1}{4}$–$2\frac{1}{2}$)[b]	All processing apples[b]
	–dollars per bushel–		
1951	1.34	0.60	0.48
1952	1.44	0.62	0.46
1953	1.80	1.30	1.00
1954	1.35	1.00	0.82
1955	0.40	0.49	0.31
1956	0.76	0.68	0.46
1957	0.85	0.79	0.49
1958	0.77	0.61	0.52

[a] Price at the farm less containers.

[b] Price at the plant less containers.

SOURCE: Data supplied by the Fruit and Vegetable Division, Production and Marketing Branch, Canada Department of Agriculture.

which absorbed up to 80 per cent of the crop. Many of these varieties have little acceptance on domestic markets but are suitable for processing and currently provide the main basis for the industry. Plantings of these varieties have been negligible in recent years and, with many now in the over-age category, a decline in the supply of processing apples can be expected.

The high-colored varieties favored on the domestic markets have predominated in new plantings during the postwar period. Unfortunately, some of the most popular varieties, such as McIntosh and Delicious, are little used for processing. Of the six preferred varieties recommended for planting in the early postwar period, only Spy is said to have good processing quality. The Ribston is the variety most favored by processors.

Outlook for processing.—A high degree of uncertainty has persisted in apple production and marketing in recent years. There are, however, some trends that indicate the possible future developments in processing. Most important of these is the continued movement of processing from a salvage operation to the production of more specialized products. Better quality products with more of the built-in services demanded by the housewife, such as peeling, coring, vitaminizing, etc., have been associated with higher prices to producers for processed apples. With considerable research on the development of new products and the improvement of existing products some increase in the demand for processed apples may be expected.

Increased specialization in the growing of processed apples is indicated by the sharp reduction in acreage of culinary varieties not well adapted to processing and the increased emphasis on processing quality in the selection of new varieties. Unfortunately, there is some difference in opinions on the suitability of some varieties. This, combined with the general market instability, has induced a cautious attitude among growers until more specific recommendations are issued. With the apple industry currently organized for the production of fresh fruit, the emphasis is on fresh fruit varieties with good processing quality. Dual-purpose varieties, however, are generally not consistent with a high degree of specialization and the time may be near when selection of varieties and other aspects of the production program will be more closely adjusted to processing requirements.

PUBLICATIONS OF THE ECONOMICS DIVISION

A Study of Some Crop Yields in Manitoba. Garland, S. W. Ottawa, February 1960. pp. 39.

A systematic record of long time average grain yields and year-to-year variations in the Province of Manitoba.

Trends in Canadian Agriculture. Supplement to the Handbook of Agricultural Statistics, Reference Paper No. 25—Part III, Trends in Canadian Agriculture, issued in 1955. Ottawa, March 1960. pp. 30.

This supplement was compiled by J. A. F. Paquette from statistical data published by the Dominion Bureau of Statistics. It contains 28 statistical tables on population, farms, crops, livestock, machinery, production, income, and other aspects of the agricultural industry.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

A. H. TURNER, Director

AUGUST 1960 **Vol. XXX No. 4**

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ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production[e]
		Total[b]	Field[b]	Animal		Composite[e]	Equipment and Materials[d]	Total	Food	
		1935-39=100						1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49 6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	221.8	169.2	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	219.6	167.6	271.6	243.0	269.5	219.1	126.5	121.1	165.4
1959										
Jan	229.9	221.2	163.6	278.7	249.8	260.4	218.2	126.1	122.3	159.6
Feb	230.9	218.3	162.7	274.0	247.7	....	....	125.7	121.2	162.0
Mar	230.6	216.0	162.5	269.5	245.0	....	....	125.5	120.0	161.8
April	231.2	217.3	163.5	271.0	244.7	273.0	220.2	125.4	119.3	166.2
May	231.2	222.3	173.6	271.0	246.9	....	....	125.6	118.5	165.4
June	230.6	225.4	180.2	270.6	247.8	....	....	125.9	119.1	166.1
July	231.0	226.3	179.7	272.8	250.6	....	....	125.9	119.2	164.8
Aug	231.0	222.0	169.1	274.9	241.9	275.2	218.8	126.4	120.5	164.2
Sept	230.9	219.1	161.1	277.0	239.9	....	....	127.1	122.4	168.3
Oct	230.0	215.5	163.1	267.9	236.5	....	....	128.0	124.2	171.9
Nov	230.2	217.2	165.2	269.1	233.9			128.3	123.8	166.7
Dec	229.7	215.0	166.9	263.1	230.8	....	....	127.9	122.4	169.5
1960										
Jan	230.5	214.6	171.6	257.7	229.4	266.7	221.9	127.5	121.6	173.4
Feb	230.0	212.0	172.0	252.0	226.6	....	....	127.2	120.8	170.0
Mar	229.6	213.6	175.1	252.2	226.7	....	....	126.9	119.4	171.4
April	231.3	218.3	180.5	256.2	233.8	....	....	127.5	120.9	167.3
May	231.3	220.0	182.3	257.8	235.4					
June	231.9	225.1	185.2	265.0	239.7	....	....	127.6	120.8	....

Note:–See earlier editions for index numbers previous to 1926

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1957—July 1958 are final with inclusion of final participation payments for Western Wheat, announced June 5th, 1959. Subsequent indexes are subject to revision.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

(e) For a detailed description of concepts, sources and methods see D.B.S. Reference Paper (61-502) Revised *Index of Industrial Production, 1935-57.*

THE ECONOMIC SITUATION

Gross National Product.—The rise in the G.N.P. slowed down in the first quarter of 1960. Except for the third quarter of 1959, the one per cent increase was the smallest quarter-to-quarter rise in the seasonally adjusted value of production since the recovery from the 1957-58 recession. Since prices changed very little, on the average, the rise in the G.N.P. represents a gain in the physical volume of output.

The first quarter of 1960 witnessed a leveling-off in total final purchases of goods and services. Final domestic demand declined but external demand for Canadian products continued to rise. The total production gain represented a movement into inventory stocks.

Total spending on gross capital formation declined to $7.0 billion from $7.1 billion in the fourth quarter of 1959. The decline was centred in business outlays for new plant and equipment and stemmed mainly from a three per cent drop in investment in machinery and equipment.

Exports.—Canada's commodity exports rose from $431.3 million in May 1959 to $485.9 million in May 1960. January-May exports rose from $1,885 million in 1959 to $2,144.8 million in 1960.

Total exports to the United States rose from $270 million in May 1959 to $277.3 million in May this year, bringing the January-May total from $1,178.9 million in 1959 to $1,276.9 million in 1960. Exports to the United Kingdom rose from $68 million in May 1959 to $87 million in May 1960 and from $287.7 million in the first five months of 1959 to $353.6 million in the same period of 1960.

Population.—Canada's population rose to 17,814,000 at June 1, 1960 from 17,442,000 a year before and 16,081,000 in 1956; at the present rate of growth it should reach 18,000,000 by December 1960.

Industrial Employment.—Canada's industrial employment index (1949=100) rose to 114.8 in April 1960 from 114.2 in March. The index stood at 115.7 in April 1959. The month-to-month increase for March-April was the smallest recorded for this period since 1952. Unfavorable weather and the late Easter slowed seasonal employment increases in some areas and layoffs in coal mining also tended to slow down employment.

The composite figure of average weekly wages and salaries was $75.98 in April 1960, a rise of 61 cents from March 1960 and $2.72 from April 1959. The composite industrial payrolls index rose to 204.1 in April from 201.5 in March 1960.

Labor.—Canada's workers received about $1,487 million in salaries, wages and supplementary labor income in April 1960, compared with $1,463 million in March 1960 and $1,427 million in April 1959. Labor income in the January-April period rose to $5,869 million in 1960 from $5,598 million in 1959.

Retail Trade.—Canada's retail sales increased from $1,363.3 million in April 1959 to about $1,421.8 million in April 1960 and from $4,901.6 million in January-April 1959 to $4,968.3 million in January-April 1960.

Wholesale Prices.—Canada's general wholesale price index (1935-39=100) rose only slightly from 231.2 in May 1959 to 231.3 in April and May 1960. The animal products group declined from 243.4 in April to 241.1 in May 1960 as a result of lower prices for eggs, fishery products, cured meats, and milk and milk products. The vegetable products group index dropped from 205.6 to 205.1, because of lower prices for fresh fruits, livestock and poultry feeds, and vegetable oils and products.

Consumer Prices.—Canada's consumer price index (1949=100) rose from 125.9 in June 1959 to 127.4 in May and 127.6 in June 1960. A rise of 0.5 per cent in the food index and fractional gains in the shelter, clothing, and other commodities and services groups accounted for the upward movement of the total index. The household operation index declined fractionally.

The food index rose from 120.2 to 120.8; higher prices were recorded for most fresh fruits and vegetables, particularly apples, cabbage, tomatoes and potatoes, and for most meats. Price declines were generally limited to eggs and butter.

Consumer Credit.—Balances outstanding on the books of sales finance companies rose from $1,021.5 million at the end of April 1959 to $1,141.1 million at the end of March and $1,164.2 million at the end of April 1960.

Balances outstanding on consumer goods rose from $758.8 million in April 1959 to $790.4 million in March and $804.1 million in April 1960. Corresponding figures for balances outstanding on commercial goods were $262.7 million, $350.7 million and $360.1 million respectively.

Cash loans and instalment credit held by companies licensed under the Small Loans Act totaled $418 million at the end of April 1959, $493.4 million at the end of March and $505.2 million at the end of April 1960. Comparative figures for accounts receivable held by department stores were $247.1 million, $284.3 million and $289.7 million respectively.

Farm Prices.—Canada's index of farm prices of agricultural products (1935-39=100) rose from 233.8 in April to 235.5 in May 1960. This is the second consecutive month of significant gains in 1960. Increased prices for livestock and potatoes between April and May offset lower prices for poultry and eggs.

Milk.—Canada's milk output rose to about 1,899 million pounds in May 1960 from 1,544.2 million pounds in April 1960 and 1,810 million in May 1959. The January-May total rose to 6,791 million pounds in 1960 from 6,430 million pounds in 1959.

Eggs.—Egg production in Canada in May 1960 was estimated at 39.1 million dozen, compared with 41.6 million in May 1959. The decline is attributable to a drop of 8.5 per cent in the number of layers which more than offset an increase in the rate of lay. Production in the January-May period declined to 192.2 million dozen in 1960 from 205.6 million in 1959.

Farm Cash Income.—Farm cash income from the sale of farm products and participation payments on previous years' grain crops totaled about $588.9 million in the first quarter of 1960. This total is $50 million below the peak reached in the first quarter of 1959 but $21 million above the average for the 1955-59 five-year period. The smaller total in the first quarter of 1960 than in the first quarter of 1959 is attributed to smaller marketings of cereal grains and flaxseed and to smaller marketings and lower market prices for hogs and eggs. Income was higher in the Maritime Provinces and slightly lower in the two Central Provinces and British Columbia. The decline was more pronounced in the Prairie Provinces where grain marketings were impeded by the supply of damp and tough grain; the decline in these provinces, however, was partly offset by supplementary payments of $23.8 million, an increase of $5.7 million from the corresponding quarter of 1959. The increase in supplementary payments is attributable, in part, to payments of $8.4 million dollars made to farmers under the Federal-Provincial Emergency Unthreshed Grain Assistance Policy effective for the 1959-60 crop year.

Receipts from field crops were estimated at $216.4 million, or $32 million less than the $248.1 million realized in the first quarter of 1959. Information sent to the Dominion Bureau of Statistics indicates that the movement of damp grain from the Prairie Provinces is largely completed and second quarter marketings are expected to be large enough to offset, in part, the effects of the drop in the first quarter.

Cash income from the sale of livestock and animal products in the first qauter of 1960 is estimated at $365.7 million, which is about $18 million lower than in the first quarter of 1959. This decline is chiefly attributable to lower returns from sales of hogs, eggs and poultry which more than offset higher returns from sales of cattle, calves and dairy products.

CO-OPERATIVES IN THE MARITIME PROVINCES

H. K. Ingersoll

The Maritime co-operative movement has a long history. Nova Scotia had agricultural associations as early as 1789. These associations were set up to improve production and promote the welfare of the rural people; they were not organized according to the generally accepted principles of co-operation. The true co-operative movement began in 1861 when a group of British miners founded a consumer co-operative store at Stellarton, Nova Scotia. Stellarton was then an industrial community with a population of about 3,000.

These miners had been members of co-operatives in England; they organized their store according to the Rochdale principles of co-operation. An experienced manager was in charge of the store for 53 years. After his retirement the society encountered financial difficulties which led to its failure two years later.

Several other co-operative stores were established before 1900. One of these stores, started in 1863 at Sydney Mines, Nova Scotia, was operated successfully for several years. This store, however, neglected to provide for a reserve fund and it failed in 1905 after a heavy withdrawal of capital and the destruction of the store by fire.

In contrast to the above failures is the story of The British Canadian Co-operative Society Limited which was organized at Sydney Mines in 1906. This society made provision for adequate reserve funds and conducted business on a cash basis. It has always operated in accordance with co-operative principles and has achieved outstanding success. Several branches have been opened and new services added from time to time.

Legislation.—A lack of appropriate legislation for incorporation may have hampered the expansion of co-operatives during this early period. Nova Scotia co-operatives were incorporated under either the Companies Act or special acts until the Farmers' Fruit, Produce and Warehouses Associations Act was passed in 1908. This Act, in its original form, provided for voting rights according to the number of shares held but an amendment in 1935 included provisions that were more in agreement with co-operative principles. Several fruit companies were incorporated under the Farmers' Fruit, Produce and Warehouses Associations Act. The Nova Scotia Co-operative Associations Act, providing for the incorporation of farmers co-operative societies, was passed in 1914. At the present time, this is the only legislation in Nova Scotia under which co-operatives may be organized.

The 1922 statutes of New Brunswick include (Chapter 34) "An Act to Provide for the Incorporation of Associations for Co-operative Marketing of Farm Products". This was the first legislation in the province specifically designed for co-operative associations, although some private acts to incorporate co-operatives had been passed previously. In Prince Edward Island, co-operatives were authorized by special acts of the Legislature until the Co-operative Associations Act was passed in 1938.

Number and Membership.—The first report on co-operative associations in Canada, published by the Department of Labour in 1928, lists ten associations in the Maritime Provinces. Total membership of the associations was then estimated at about 16,000, or 1.6 per cent of the population of the area. The number of associations continued to increase, according to the statistics on co-operatives compiled by the Economics Division of the Department of Agriculture. The 1935 summary published by the Division listed 86 agricultural associations with a total of over 18,000 members.

Table 1.—Number of Co-operatives in the Maritime Provinces, 1950-1958

Year	Number of associations			
	Marketing and purchasing	Fishermen's	Service	Total
1950	219	47	8	274
1951	206	49	5	260
1952	175	38	5	218
1953	169	41	21	231
1954	159	42	27	228
1955	155	35	28	218
1956	160	32	24	218
1957	168	30	31	229
1958	168	27	33	228

Although the number of associations had risen to 157 by 1940, the membership increased only slightly between 1932 and 1940. The 1945 summary reported only 149 co-operatives but total membership had increased to over 36,000.

In 1950 a total of 274 co-operatives reported their operations to the Economics Division (Table 1). The total membership of 47,000 in that year was 3.7 per cent of the total population of the area (Table 2). In 1952, 218 co-operatives reported a total membership of 43,000. During the following years, the number of associations fluctuated but the total membership increased steadily to 60,000 for the 228 societies which reported in 1958.

Although new co-operatives were organized and others ceased operations from time to time, the fluctuation in the number of co-operatives was caused mainly by intermittent reporting by some co-operatives and also by amalgamations. Changes in the classification also may have contributed to this fluctuation. Some duplication occurred in the total number of members reported as a result of persons holding membership in two or more associations.

Agricultural Co-operatives.—The impotrance of co-operatives in the economy of the Maritime Provinces is indicated by the value of farm products and supplies handled by agricultural co-operatives. The total business reported by Maritime agricultural co-operatives for 1958 was $43.2 million. This included sales of supplies and equipment to members totaling $25.4 million and the marketing of members' produce valued at $17.2 million. In 1932, they reported a total business of $4.9 million of which $3.3 million represented the value of farm produce marketed and the remainder the value of supplies sold to members.

Table 2.—Membership of Co-operatives in the Maritime Provinces, 1950-1958

Year	Membership			
	Marketing and purchasing	Fishermen's	Service	Total
1950	43,075	3,545	424	47,044
1951	44,848	3,561	1,576	49,985
1952	39,038	3,126	845	43,009
1953	38,392	3,103	2,855	44,350
1954	39,048	3,308	3,468	45,824
1955	40,406	3,031	3,202	46,439
1956	43,418	2,820	4,028	50,266
1957	43,924	2,702	9,633	56,259
1958	47,092	2,807	9,797	59,696

Table 3.—Business Volume of Agricultural Co-operatives in the Maritime Provinces, 1950-1958

Year	Farm and consumer supplies sold	Farm products marketed	Total business including other revenue[a]
	— thousands of dollars —		
1950	17,283	16,220	36,554
1951	18,771	14,836	34,569
1952	18,872	12,687	33,746
1953	23,076	12,514	36,022
1954	19,987	9,989	30,237
1955	21,246	13,088	34,797
1956	22,451	13,668	36,629
1957	25,138	15,830	41,536
1958	25,385	17,192	43,234

[a] Other revenue includes returns from such services as grinding and seed cleaning, rentals, interest on investments and refunds from co-operative wholesales.

The value of supplies distributed among members by the Maritime co-operatives has, since 1946, exceeded the value of produce marketed. Previous to 1946, the marketing of members' produce accounted for the greater part of the total business.

Food purchased by members comprised about half of the annual total sales of supplies (Table 4). Feed and fertilizer accounted for about 30 per cent of the total, and clothing and petroleum products about five per cent each. Machinery, together with coal and wood, approximated five per cent of the total supplies sold by the agricultural co-operatives.

Maritime co-operatives marketed over $17 million worth of farm products in 1958, an increase of one million dollars over the previous peak in 1950 (Table 3). The total sales of farm products through co-operatives reached $13 million each year since 1947, except in 1954 when they dropped to $10 million. Sharp fluctuations, as in 1954, are attributed partly to variations in the number of associations reporting.

According to early reports, the marketing of farm products by Maritime co-operatives amounted to $4 million in 1941. This was equal to 9.2 per cent of the cash income from farm products reported by the Dominion Bureau of Statistics. In 1951, the co-operatives handled farm products worth $15 million, or 13.8 per cent of the cash income from farm products.

The share of farm products marketed by co-operatives, relative to the cash income from the sale of farm products, dropped to 10.8 per cent in 1952. Further decreases in the total produce marketed reduced this share to 9.2 per cent in 1954, the lowest point in recent years. Since 1954 the value of

Table 4.—Distribution of Farm Supplies and Consumer Goods by Agricultural Co-operatives in the Maritime Provinces, 1950-1958

Year	Food products	Clothing	Petroleum products	Feed and fertilizer	Machinery	Coal and wood	Miscel-laneous
	— thousands of dollars —						
1950	9,795	1,023	233	5,297	244	317	374
1951	10,068	764	502	6,134	352	339	612
1952	11,128	557	404	5,590	423	289	486
1953	11,505	925	923	7,004	559	396	1,764
1954	10,365	1,250	947	5,747	418	350	909
1955	9,940	1,199	1,238	6,594	606	645	1,024
1956	11,120	1,105	1,025	7,040	489	530	1,123
1957	12,490	1,200	1,230	7,182	366	706	1,959
1958	12,156	1,174	1,485	7,907	514	566	1,584

Table 5.—Farm Produce Marketed by Agricultural Co-operatives in the Maritime Provinces, 1950-58

Year	Dairy products	Fruits and vegetables	Grain and seed	Livestock	Eggs and poultry	Miscel-laneous
			— thousands of dollars —			
1950	8,496	4,320	207	1,929	924	346
1951	7,397	3,160	254	2,803	926	197
1952	6,688	2,156	429	1,730	1,251	433
1953	5,895	2,923	256	1,606	1,294	540
1954	5,040	1,836	337	1,232	1,197	347
1955	7,256	2,773	236	1,071	1,441	308
1956	8,735	1,897	158	866	1,724	288
1957	9,009	2,807	194	1,430	2,166	225
1958	8,784	4,644	167	1,468	1,995	232

products marketed by co-operatives has increased each year, reaching $17 million in 1958 or 14.8 per cent of the cash income from sale of farm products in the Maritimes in that year.

At the close of the 1958 fiscal year the assets of the local marketing-purchasing co-operatives in the Maritimes totaled nearly $15 million (Table 6). This was an increase from the previous year and continued the pattern of growth which has prevailed since 1949 when the total assets were $11 million.

The fixed assets exceeded $5 million in 1958 and accounted for 35 per cent of the total assets. The ratio of fixed assets to total assets has tended to decrease since 1949 when 39 per cent of the total assets consisted of fixed assets.

Members have supplied a larger portion of the total capital in recent years. The equity held by members was close to $10 million in 1958 which equaled 65 per cent of the total assets, compared with $6 million in 1950 which was 55 per cent of the total assets. The average equity of a member increased to $205 in 1958 from $140 in 1950.

Fishermen's Co-operatives.—Early reports of Maritime co-operatives mention a lobster factory at Port Hilford, Nova Scotia in 1895. This was probably one of the earliest examples of co-operative organization among fishermen in Canada. The Department of Fisheries reports the establishment of a fishermen's co-operative at Tignish, P.E.I. in 1924. The next fishermen's co-operatives to be reported were formed in New Brunswick and Nova Scotia in 1930. Several associations were established in the area during the following few years.

Table 6.—Financial Structure of Agricultural Co-operatives in the Maritime Provinces, 1950-58

Year	Total assets	Plants	Liabilities		Worth	Equity
		Fixed assets	Public	Members'		
			— thousands of dollars —			
1950	10,859	4,268	4,831	1,031	4,997	6,028
1951	10,953	3,932	4,537	1,737	4,680	6,416
1952	11,438	4,170	4,820	1,181	5,436	6,618
1953	11,006	3,937	4,229	1,977	4,800	6,777
1954	10,805	4,012	4,224	1,644	4,937	6,581
1955	11,605	4,316	4,589	1,282	5,734	7,016
1956	12,843	4,647	5,067	1,962	5,815	7,778
1957	13,854	5,082	5,275	2,726	5,853	8,579
1958	14,725	5,150	5,066	2,638	7,022	9,659

According to the 1941 report on co-operatives, 63 of the 77 fishermen's co-operatives in Canada were located in the Maritimes.

The first provincial statistics on fishermen's co-operatives, published in 1948, listed 87 associations operating in Canada with almost 13,000 members. In that year, 46 associations in the Maritimes reported a membership of 3,015. The total revenue in 1948 amounted to $17 million for all fishermen's co-operatives in Canada and $4.3 million for those in the Maritimes.

The number of Maritime associations decreased gradually from 47 in 1950 to 28 in 1958. At the same time, the average number of members increased from 65 to 100. The total value of business done by these co-operatives also increased steadily, reaching $8.5 million in 1958. About 10 per cent of the total value of fish products for the Maritimes, reported by the Dominion Bureau of Statistics, was marketed by co-operatives during the years 1950 to 1957.

Service Co-operatives.—Most of the service co-operatives in the Maritimes are artificial breeding associations in New Brunswick and Nova Scotia. The remainder includes those that supply water, electricity, transportation and storage, and certain types of insurance or mutual benefit associations that provide for the payment of medical, hospital and funeral expenses.

Eight service co-operatives reported total assets of $71,000 in 1950. By 1958, there were 33 associations with assets of $228,000. Twenty-four of these were artificial breeding societies.

Table 7.—Statistical Data on Fishermen's Co-operatives in the Maritime Provinces, 1950-58

Year	Associations	Members	Value of fish sold	Value of fishing supplies and merchandise sold	Total business, including revenue
	— number —		— thousands of dollars —		
1950	47	3,545	4,149	977	5,147
1951	49	3,561	4,403	1,384	5,801
1952	38	3,126	5,087	1,176	6,359
1953	41	3,103	5,753	1,248	7,025
1954	42	3,308	5,866	1,001	6,875
1955	35	3,031	5,788	1,149	6,962
1956	32	3,820	6,292	1,078	7,406
1957	30	2,702	6,932	1,066	8,021
1958	28	2,807	7,577	1,058	8,561

Table 7.—Statistical Data on Fishermen's Co-operatives in the Maritime Provinces, 1950-58 (Concluded)

Year	Total assets	Liabilities to the public	Liabilities to the members	Members' equity
	— thousands of dollars —			
1950	2,073	938	356	1,135
1951	2,381	1,162	422	1,219
1952	2,099	1,182	111	917
1953	2,189	1,187	313	1,002
1954	2,671	1,627	248	1,044
1955	2,890	1,863	295	1,027
1956	3,026	2,015	274	1,010
1957	2,404	1,399	306	1,005
1958	2,625	1,457	427	1,168

Housing Co-operatives.—Co-operatives have done much to relieve the shortage of adequate housing in the Maritimes. The first housing co-operative in the Maritime Provinces, the "Arnold Co-operative Housing Association" at Tompkinsville, Nova Scotia, was started in 1938. By 1958, when the Arnold Association celebrated "the burning of the mortgage", several other similar projects had been successfully completed or were being developed.

As the result of a survey which reported insufficient and inadequate housing, the Nova Scotia Legislature passed the Housing Commission Act in 1932. The Commission appointed under this Act promoted the construction of low-cost housing by the co-operative method. New Brunswick also encouraged co-operative housing by amending the Co-operative Societies Act in 1954 to provide for the incorporation of housing co-operatives. Legislation concerning housing co-operatives is under consideration in Prince Edward Island.

The available information on co-operative housing in the Maritime Provinces is limited. For this reason, it is not possible to show the development of these organizations during the past years.

APPLE CONSUMPTION IN THE MONTREAL METROPOLITAN AREA

R. CHOQUETTE

Apples are a most popular fruit in the Montreal metropolitan area. Consumption reaches a peak in September, October and November; apples of superior quality then overflow on the market and retail at lower prices than at any other time during the year. Purchases hit their lowest level in the summer months when apples of poor quality have to compete against an abundance of other and fresh fruits.

A report on a study of "Consumer Preferences for Apples in Greater Montreal" stresses these and other aspects of demand in the Montreal apple market[1]. This study had been undertaken by the Economics Division at the request of the Quebec Agricultural Marketing Board.

Enumerators visited 313 families from October 7 to November 28, 1957 and 304 from March 3 to April 15, 1958. About 96 per cent of these 617 families bought apples of the 1957 crop during a 4-week period immediately preceding the personal interview. Two hundred and sixty-five of the 313 families (85 per cent) visited in the fall and 228 (75 per cent) of those visited in the spring of 1958 had bought apples as often as two or four times a month. The most popular places where to buy apples were, in order of importance, chain grocery stores, independent grocery stores, public markets, roadside stands, fruit stores, and peddlers.

In the fall a group of 40 families with an annual income of less than $2,500 had purchased an average of 22.3 pounds of apples per family, compared with 28.3 pounds for the 147 families in the $2,500 to $5,000 income group, 29.8 pounds for the 71 families in the $5,000 to $7,500 income group, and 33.7 pounds for the 48 families with an annual income exceeding $7,500. This gradual increase in purchases, according to size of family income, was not so evident in the spring period, when 163 families with an income of less than $5,000 purchased close to 15 pounds of apples, a month, on the average, compared with about 18 pounds for the 121 families with a higher income.

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[1] Choquette, R. and L. E. Drayton. Consumer Preferences for Apples in Greater Montreal. Economics Division, Canada Department of Agriculture. April 1959.

Very small families, comprising one or two persons, were fairly heavy buyers of apples in the fall season. Halloween' apple gifts may have accounted for a large part of their purchases. Families with children five years old or younger used fewer apples per person than other families. Otherwise, family size and composition had little effect on per capita purchases of apples.

To the question "What is the main use of most of your apples?" close to four-fifths of the respondents said that they consumed most of their apples in raw form; more than 15 per cent mentioned sauce, four per cent pies and one per cent baked apples. Variations in apple uses were generally the same, irrespective of the size of family income. Many families never had baked apples or apples in salads, nor apple pudding.

Hardness and firmness of the apple is the chief factor motivating choice at time of purchase; 39 per cent of the families visited chose their apples on this basis. Redness influenced the choice of 32 per cent and good appearance that of 22 per cent of the purchasers. Less than one quarter of the apple purchasers were interested in grade. Families that preferred Quebec apples gave flavor as the chief reason for the purchase of those apples.

Eighty per cent of the housewives said that for eating raw, they preferred a medium-size apple. Close to 30 per cent said that firmness had no importance but that juiciness and sweetness had some importance for cooking. Lack of variety and low quality were the main reasons given for not being completely satisfied with the apples available. Lack of cooking apples, especially in the fall, mixture of sizes in containers and too high a price were other complaints made by some people.

In the fall, some families would have bought more apples but at prices ranging from three to five cents a pound lower than the price prevailing at the time of the survey. In the spring, some people would pay the fall prices but others wanted a reduction of from three to 15 cents a pound.

When the 617 respondents were asked whether they preferred purchasing apples by the pound or in some sort of container, 24 per cent said they preferred purchases by the pound and about 75 per cent purchases in a container. Plastic bags were more in demand among families with annual incomes ranging between $2,500 and $7,500 than among those with lower or higher incomes. On the other hand, more families with an annual income of less than $2,500, than other families, preferred purchasing apples by the basket or by the bushel. Most respondents favored the three and five-pound containers, without a handle. Most of them also kept their apples in the kitchen, without refrigeration.

More families bought apple juice rather than any other apple products. About 15 per cent of the families were interested in the vitaminization of apple juice; they bought four times as much of this product as other families. Usually, people preferred a clear apple juice because of its better appearance and flavor. About half of the respondents said that they did not serve apple juice or did not serve it more often because of its acidity and poor digestibility and also because they liked other fruit juices better.

About 33 per cent of the families purchased apple sauce; high income families purchased a little more of it than low income families. Most of the housewives baked their own apples. Only 27 per cent of those interviewed had bought apple pies during the 12 months preceding the enumerator's visit.

A STUDY OF SMALL FARMS IN THE DAVIDSON AREA OF CENTRAL SASKATCHEWAN

J. K. Wiens

Some worthwhile information on small farms was obtained from the 1959 phase of studies of changes in farm organization conducted by the Economics Division. This particular phase of the study concerned farms located on Weyburn loam soils in the Davidson area. This area comprised 23 townships in rural municipalities 222, 252, 253 and 282.

In the studies made from 1954 to 1957, three size groups of farms had been sampled. Farms with a complicated type of organization such as the joint ownership of machines, the combination of farming with other occupations, etc., were eliminated from the sample. The half section farms were to represent the small farms. However, many of these farms were operated along with another job, owning machines jointly with another farmer, etc., and it became difficult to obtain a sample that would meet the requirements of the studies. So, this group was dropped in 1958 and 1959. The small farms (three quarter sections and less in size), however, comprise as much as 30 per cent of the farms in the 23 townships. To obtain information on their operations, from November 1958 to November 1959, a sample of 30 two-quarter section farms was randomly selected within the 23 townships.

Farm Business Analysis

The largest single item of expense was machine depreciation and the next largest was cash equipment operating expenses. Depreciation was calculated, on replacement cost, according to the straight line method. The depreciation percentage was the same as that used in studies of changes in farm organization —it was also based on the estimated life of each type of machine. All car and truck expenses were charged to the farm business, because of difficulty in segregating personal use from use for the farm business. No costs were charged for the use of the house, because of the lack of consistency in housing arrangements. For example, some families lived in a farm house during the summer and others all year long, some had a vacant house on the farm and lived in town, some had no farm house and lived in town, some lived with relatives and had no house, etc. However, where a farmer lived on the farm the electric bill which ran over $60 a year, on the average, was included as a farm cost. Farm perquisites such as milk, cream, butter, eggs and vegetables were not evaluated. Information was collected in November when harvesting had not been completed on all farms; it was being carried on under very adverse conditions. Yields and grades for the unthreshed grain were estimated on the basis of the output of the last threshed grain.

For analysis purposes the 30 farm records were divided into three groups. Group 1 included 10 farmers whose income from farm operations was not the main source of income. Group II included nine farmers who supplemented their farm income with off-farm earnings. Group III included 11 farmers who secured most of their income from farm operations; these farmers had no off-farm labor earnings. Five of the farmers in Group I had other full-time employment and worked the farm as a sideline, or only supervised the operation of the farm, and had a large part of the work done on a custom basis. Three had another business which provided the main source of income and three owned land that was rented out, and farmed the half section on a semi-retirement or hobby basis.

Table 1.—Average Land Use, 30 Selected Small Farms, Davidson Area, Saskatchewan, 1959

	Group						All farms	
	I		II		III			
	Acres	Per cent of total	Acres	Per cent of total	Acres	Per cent of total	Acres	Per cent of total
Wheat	116	37	113	37	132	40	121	39
Durum wheat	18	6	24	8	5	1	15	5
Oats	5	1	21	7	9	6	15	5
Barley	5	1	1	[a]	7	2	5	1
Flax	9	3	—	—	8	2	6	2
Summerfallow	139	44	122	39	129	39	130	40
Improved pasture	—	—	—	—	7	2	2	[a]
Total improved land	292	92	281	91	307	92	294	92
Used unimproved pasture and farmstead	10	3	18	6	18	6	16	5
Idle land	15	5	9	3	7	2	10	3
Total assessed acres	317	100	308	100	332	100	320	100

[a] Less than .05 per cent.

Land Use.—Table 1 describes the average pattern of land use. The main difference, between the three groups, was that farmers in group I had a smaller oats acreage and a larger summerfallow acreage. Most of the improved land was seeded to wheat or summerfallowed. Forty-six per cent of the improved land was in wheat (including durum) and 44 per cent in summerfallow.

Wheat was the main crop grown in 1959. The average yield, for the area, was 1.3 bushels an acre above the 1918-1959 average but 3.5 bushels an acre below the 1950-59 average.

Farm Capital.—The caiptal structure of the farms is described in Table 2. Investment in land was based on twice the municipal assessed value and did not include rented land. Building and machinery values were based on depreciated replacement costs and did not include the house. The machine inventory was lower on farms in group I, which accounts for the higher custom work costs for this group. The investment in livestock and buildings was much smaller on these farms than on farms in the other two groups. Data on investment in land are somewhat misleading since they do not include rented land. Were it included the investment would total $7,790, $6,911, and $8,190, respectively,

Table 2.—Average Capital Structure of 30 Selected Small Farms, Davidson Area, Saskatchewan, 1959

	Group			All farms
	I	II	III	
	— dollars —			
Land[a]	5,810	5,733	7,463	6,393
Buildings	181	821	1,625	902
Machinery	4,491	4,980	4,803	4,752
Livestock	145	1,265	1,398	941
Total[a]	10,627	12,799	15,289	12,988

[a] Does not include rented land. The total value of rented land was $38,400. If included in the above table this figure would have increased the investment in land, as well as total investment, by $1,980 for group I, $1,178 for group II, $727 for group III, and 1,280 for all 30 farms.

for each of the three groups. On an acreage basis, the capital invested in the land averaged $26.68 an acre for the farms in Groups I and III. The total capital invested averaged $12,988 per farm.

Farm Debts.—Debts were divided into three groups: short term debts to be repaid within a year, such as taxes, fuel bills, lumber bills, etc.; intermediate term debts that run from three to five years and incurred mainly for purchases of machinery and equipment; and long term debts repayable over a longer period of time and usually incurred for land purchases (Table 3).

Farmers in group II had larger debts—short, intermediate or long term debts—than farmers in either of the two other groups. They were younger farmers getting established who had to have outside sources of income to help "make ends meet". Most of the indebtedness in group I had been incurred by two farmers. Sixty-six per cent of the long term debts were financed through loans of the Canadian Farm Loan Board, 58 per cent of the intermediate debts by loans under the Farm Improvement Loans Act; 54 per cent of the short term debts consisted of tax arrears.

Farm Receipts.—The income from grain and livestock (Table 4) includes cash sales, changes in inventory, and livestock used on the farm, but does not include the value of livestock products consumed by the farm family. Eleven farmers obtained all the eggs needed for home consumption from their farms and 10 used dairy products from their farms for home consumption.

Total income from grain and livestock averaged $3,122 per farm. This income was supplemented by P.F.A.A. payments, acreage payments and custom work. The farmers in Group II earned $501 per farm, on the average, for work off the farm. Farmers in Group I also had income from off-farm labor, as well as from investments, business and other undertakings.

Farm Expenses.—The largest part of the farm expenses was the direct result of machine and equipment operations. Cash expenses for this purpose, such as fuel, oil, grease, repairs, tires, blacksmith bills, small hardware, insurance and license averaged $586 per farm. Depreciation costs on equipment and machinery averaged $671 per farm. All costs for car and truck operation were included in these figures. By adding custom work to these costs one finds that 66 per cent of the cash and depreciation costs were incurred for machine and equipment operations. The large average livestock expense for group II resulted from the purchase of livestock feeders and poults by one farmer, and the even higher average for group III was chiefly due to the purchase of poults and feed by one farmer.

Farm Income.—An outline of the data on farm income is given in Table 4. Three measures of income were used. In the first one only cash expenses were deducted from total farm receipts and interest charges on debts were not taken into consideration. The second measure is the return to the operator's labor and capital. It is the amount available from farming operations in 1959 for living costs and servicing of debts if the farmer paid all his farm operating expenses and replaced machinery and equipment by the amount of the calculated depreciation. This was not the case; the 30 farmers spent only an average of $180 for this purpose. The third measure is the labor return to the operator, after allowing a return of five per cent on all his farm investment. In each case, farmers in group I had the lowest returns; there was little difference in returns for the other two groups.

The distribution of labor and capital income (Table 5) and labor income (Table 6) shows a fairly wide range in farm income. Returns to labor and capital ranged from a deficit of $1,494 to an income of $6,708. Two farmers in group II had incomes much above the average and one farmer in group III had a much lower income than the average.

Table 3.—Average Indebtedness per Farm, 30 Selected Small Farms, Davidson Area, Saskatchewan, 1959

Type of Debt	Group I	Group II	Group III	All farms
	— dollars —			
Long term	284	764	20	331
Intermediate term	245	278	201	239
Short term	....	408	118	166
Total debts	529	1,450	339	736

Table 4.—Average Receipts and Expenses, 30 Selected Small Farms, Davidson Area, Saskatchewan, 1959

	Group I	Group II	Group III	All farms
Receipts:				
Farm:				
Grain	1,966	2,358	2,303	2,207
Livestock	75	1,567	1,145	915
Subtotal	2,041	3,925	3,448	3,122
P.F.A.A.[a]	123	117	113	117
Acreage payment[b]	185	200	200	195
Custom work	—	58	—	18
Subtotal	308	375	313	330
Total farm receipts	2,349	4,300	3,761	3,452
Other income:				
Off farm income	[c]	501	[d]	[c]
Family allowances	65	101	26	62
Expenses:				
Cash:				
Taxes	164	179	212	186
Other real estate costs	8	61	32	33
Crop	46	81	76	68
Equipment	387	688	684	586
Custom work	236	97	145	161
Livestock	24	838	282	363
Labor	13	—	—	4
Other	—	17	30	16
Total cash expenses	878	1,961	1,461	1,417
Depreciation:				
Buildings	13	46	84	49
Equipment and machinery	597	767	660	671
Total depreciation	610	813	744	720
Total cash and depreciation	1,488	2,774	2,205	2,137
Interest[e]	531	640	764	649
Total farm cost[f]	2,019	3,414	2,969	2,786
Total farm income less cash expenses	1,471	2,339	2,300	2,035
Return to operator's labor and capital	861	1,526	1,556	1,315
Returns to operator's labor	330	886	792	666

[a] P.F.A.A. payments received during the record year but based on 1958 crop yields.

[b] Received at the start of the crop year, November 1958.

[c] Income from investments such as bonds, farm rental income and the operation of another business was not enumerated.

[d] Two farmers in this group had income from bond interest but the amount was not enumerated.

[e] Includes a five per cent charge on investment in land, buildings, machinery and livestock.

[f] Excludes operator's and family labor.

The Farmer

Five of the farmers in group I did not have to adjust their present farm plans. Two were farming for the last year and two planned to have larger farms some day and become full-time farmers. Another had been forced to find other employment to supplement his farm income.

In group II three farmers were satisfied with their present holdings, four wanted to rent or buy additional land, one left his farm in the fall of 1959 and the other had no definite plans.

Table 5.—Distribution of Labor and Capital Income by Farm Groups, 30 Selected Small Farm , Davidson Area, Saskatchewan, 1959

Income Group	I	II	III	All farms
— dollars —	— number —			
−2000 to −1001	—	—	1	1
−1000 to − 1	3	1	—	4
0 to 999	3	5	3	11
1000 to 1999	3	1	2	6
2000 to 2999	—	—	5	5
3000 to 3999	—	1	—	1
4000 to 4999	1	—	—	1
5000 to 5999	—	—	—	—
6000 to 6999	—	1	—	1

Table 6.—Distribution of Labor Income by Farm Groups, 30 Selected Small Farms, Davidson Area, Saskatchewan, 1959

Income Group	I	II	III	All farms
— dollars —	— number —			
−3000 to −2001	—	—	1	1
−2000 to −1001	—	—	—	—
−1000 to − 1	6	5	1	12
0 to 999	3	1	2	6
1000 to 1999	—	1	6	7
2000 to 2999	—	—	1	1
3000 to 3999	—	1	—	1
4000 to 4999	1	—	—	1
5000 to 5999	—	1	—	1

Table 7.—Average Wheat Yields by Rural Municipalities, 30 Selected Small Farms, Davidson Area, Saskatchewan, 1959[a]

Period	Rural municipality number				Average
	222	252	253	282	
	— bushels per acre —				
1920–29	12.4	13.7	14.0	14.9	13.8
1930–39	5.5	7.1	5.7	8.3	6.6
1940–49	10.8	12.8	10.6	12.8	11.8
1950–59	16.7	17.8	15.3	16.7	16.6
1920–59	11.4	12.9	11.4	13.1	12.2
1959	12.0	15.0	13.0	14.0	13.5

[a] Summarized from data supplied by the Provincial Secretary of Statistics.

Table 8.—Age Distribution of Farm Operators, 39 Selected Small Farms, Davidson Area, Saskatchewan, 1959

	Group			All farms
	I	II	III	
60 and over	4	—	8	12
40–59	4	4	2	10
39 and under	2	5	1	8
Total	10	9	11	30

Table 9.—Machines Obtained on Custom Work Basis, Exchange or Loan Basis, 30 Selected Small Farms, Davidson Area, Saskatchewan, 1959

Machine	Hired on custom work basis	Borrowed on an exchange basis	Borrowed	Loaned out on an exchange basis
	— number of farmers —			
Swather	6	7	3	1
Combine	8	3	2	3
Truck	4	4	1	3
Seeding equipment	2	2	2	—
Baler	3	3	—	—
Sprayer	1	3	2	1
Grain loader	—	3	2	—
Cultivator	1	3	1	1
Threshing machine	—	1	—	—
Tractor	—	—	—	4
Labor	—	—	—	5

In group III seven were satisfied with their present farm organization; they had farmed their land for about 34 years, on the average, and were now thinking of retiring from farming. One planned to retire immediately, because of poor health; one had already acquired more land for 1960; and the other two were satisfied but would rent or buy another quarter if land were available in the neighborhood. Most of the farmers in this group were older men whereas those in group II were much younger (Table 8).

A fairly large amount of the field work was custom hired or done with machines obtained on exchange. Sixteen farmers secured at least one farm machine on an exchange basis and 14 hired at least some custom work done (Table 9). Only six farmers did not hire work done or exchange machines.

Nine of the farmers in group I lived in town but few of those in the other two groups did so; seven, in each of these groups, lived on their farms the full year and one lived on the farm in summer and in town in winter. In all, 15 farmers lived on the farm the full year.

Sixteen of the 19 farmers in the first two groups had acquired their farms since 1940. Of the 11 farmers in the other group three had begun farming before 1920; five between 1920 and 1939 and three since 1940.

Twenty-three farmers started without any outside assistance; five started with Veterans' Land Act assistance; and three had been helped by their immediate family.

Five farmers rented the land they farmed, one rented part of his farm, and the other 24 owned all their land.

RESOURCE REQUIREMENTS ON SOME TYPES OF FARMS IN MANITOBA

J. G. MacKenzie and S. W. Garland

Mechanization and other technical innovations lead to important changes in production methods and farm organization. The use of tractor power, swathers and combines, hay balers, loose housing for cattle, and other labor-displacing equipment enables the farm operator to increase his cultivated acreage and livestock units without additional labor or even with a reduction in the number of farm workers.

On many farms, however, labor and machinery are not used efficiently. Technical changes taking place in agriculture today are advantageous only on farms with a fairly large output. Recent farm studies conducted by the Economics Division[1] and census data would indicate that many farms in Manitoba are much too small in terms of total business to provide an acceptable standard of living for the operator and his family.

Purpose and Method of Study.—The purpose of this article is to provide information on the minimum amount of land and other resources which farm operators would need, on the major types of farms in selected areas of Manitoba, to realize average annual labor earnings[2] of $2,500 per farm. To reach our goal in the most direct manner possible, we have set up farm plans, for four different farming areas, which give full consideration to the following aspects of the farm business:

a) farm organization
b) amount and kind of resources
c) capital structure
d) debt-retiring capacity of the farm business.

This information should be of particular interest to potential agricultural entrepreneurs and to those farm operators who must greatly increase the size of their business or otherwise change their farm organization to raise their labor returns to an adequate level. These people, in their attempt to raise living standards, may wish to weigh possible future net farm returns from available resources against alternative opportunities in other fields of employment.

Where reorganization of the farm business entails substantial purchases of land, machinery, or livestock, credit financing is usually required. In such instances, a farm plan which shows the source and the approximate amount of receipts will be of invaluable assistance to both the borrower and the lending agencies in determining the optimum amount of credit and the most suitable payment arrangements.

Farm plans described in this article are listed according to general area, type of organization, and typical soil or soils as follows[3]:

General area	*Type of organization*	*Typical soil*
Red River	Grain	Red River clay Osborne clay
South central	Grain	Pembina clay loam Manitou clay loam

---

[1] Unpublished reports.

[2] Returns to labor and management when all costs of production, including depreciation charges for machinery and buildings, have been deducted, and an allowance has been made for interest charges on all capital investment.

[3] A more complete report, shortly to be published, will also include grain farms in the southwestern and west central areas and a grain-beef cattle farm in the Eriksdale, Fork River and Ethelbert areas.

Western	Grain-beef cattle	Oxbow loam
The more productive grazing land of the Interlake area	Beef-cattle	Unspecified soils, generally of low productivity

Farm people aim at a standard of living which compares favorably with that enjoyed by workers of equal skills or capabilities in non-farm work. In this article, we assume that a minimum of $2,500 in labor earnings to the farm operator is required for a generally acceptable standard of living. This income will be required to provide housing for the family, electrical household appliances, education for the children, medical care, insurance, the family car, and an allowance for holidays and social entertainment.

We give particular attention to differences in farm types and production methods among the various farming areas of Manitoba. Grain farms should prevail in areas where the soil is highly productive and well-suited to grain growing and where a large part of each farm is or may be cultivated. Other areas have very productive arable land but a large part of many farms is non-arable and suited only to grazing and the growing of wild hay; these areas favor the grain or the grain-cattle type of farm. In still other areas the low-productivity soils are suited only to grazing and farmers use the land to raise beef cattle.

In setting up our various farm plans we adhere to the following rules and assumptions.

1. **Prices and Costs.**—Cost data, for resources used in production, and prices of farm products available for sale are average costs and prices for the four-year period, 1954-57.

2. **Land Use.**—Sugar beets and sunflowers, two special crops, are not considered in our farm plans. The dairy, hog and poultry enterprises are also excluded, even if they prevail in many farming areas of Manitoba, because of the growing tendency to have a small number of specialized farmers to manage these enterprises under contract arrangements with processing firms.

On grain farms the non-arable land is simply waste land since it does not contribute to production and income. On grain-beef or beef cattle farms, on the other hand, the non-arable land supplies pasture and hay and the cropped acreage is seeded to wheat, oats, barley and sometimes flax; some land is also seeded to grass where improved pasture or hay is required to maintain the herds.

3. **Cultural and Tillage Practices.**—Seed grain for wheat, oats, barley and flax crops are home-grown. Seed cleaning and handling costs include transportation and cleaning charges by commercial seed cleaning plants for all seed grain. All crops are seeded with the common seed drill, sprayed for weed control, and swathed and combined. No allowance is made for the use of commercial fertilizer. Crop yields used in the budgets are slightly above the long-time average yields for each area[1].

4. **Livestock Inventory and Practices.**—Beef cattle is the only kind of livestock kept on these farms. These cattle are of good commercial stock and inventory numbers remain about constant from year to year. Capital investment includes only the values for the cow herd. These values are based on commercial beef prices.

All receipts from this enterprise are from the sale of beef. A part of the basic cow herd is sold each year and replaced by home-raised heifers. Cattle for sale are either grain-fed and marketed in late winter or sold off grass in the fall, depending on the practice best suited to the respective areas.

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[1] *Wheat Yields by Towns*, Sanford-Evans Statistical Service, Winnipeg, Manitoba.

5. **Machinery Inventory and Costs of Operation.**—In setting up the machiney complement, we considered the kind, size, and number of those machines that can satisfactorily perform the operations required on each type of farm. The kind and size of machines vary according to type of farm, physical features of the soil, and kind of crops produced [1]. A second, smaller tractor is used for field operations such as drag harrowing, seeding, yard chores, or other jobs where less power is required. No allowance is made for a truck but one-half the value of the family car is included. Two rubber-tired trailers are allowed for farm hauling. The machinery complement is valued at about half its replacement cost.

Machinery operating costs to produce the various crops and for tillage of the fallow land include such expenditures as fuel, repairs, and interest and depreciation. Depreciation is based on estimated replacement costs. One-half of the car operating costs, including insurance, is charged to the farm business. Insurance for machinery covers tractors and combine. The cost of weed spray is included with machinery operating costs.

Costs for hauling grain cover commercial trucking charges to transport all saleable grain from farm storage bins to town elevator. Some farmers may be able to operate a farm truck for hauling grain at the same and possibly at a lower cost than the cost figures used in our study; they would then operate their own truck rather than hire the work done.

6. **Building Inventory and Costs.**—Freshening cows, calves, and grain-fed fattening steers are housed in barn-type shelters. Other cows, heifers, and steers which are being carried over winter without grain are housed in shed-type shelters. Granaries are provided to store all grain produced in one crop year. A machine shed is included to provide shelter for machines, such as car, tractor and combine, which are most subject to depreciation from exposure to weather. A depreciation charge, calculated on replacement cost, is included in farm expenditures to provide for replacement and maintenance of all buildings shown in the respective farm plans.

7. **Real Estate Inventory.**—The capital investment in buildings represents the value which the buildings would add to the bareland value if the real estate were to be sold. Total capital investment in real estate therefore represents bareland value plus the additive value of the buildings.

8. **Labor Requirements.**—The operator supplies the major part of the labor force. Additional labor will be hired during the harvesting and/or the haying season on farms where total requirements exceed the work done by one man. No allowance is made for unpaid family labor. We recognize that unpaid family labor, that is, work done by the children and the operator's wife, frequently contributes to the farm labor force. When this type of labor is utilized in the farm business any additional net farm income will represent returns to the unpaid family labor rather than to the operator.

9. **Receipts and Expenses.**—Farm receipts represent the value of all grain produced in the crop year except the grain used for farm seeding and livestock feeding, and the sales of livestock. There is no allowance for inventory change in either grain supplies or livestock numbers. All farm produce is assumed to be sold. Therefore there is no farm income designated as perquisites. Non-farm income does not enter into the picture. Farm expenses represent all current operating costs, depreciation allowances on machinery and buildings, and interest on total farm capital investment.

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[1] For a description of kind and size of machines used in the different areas of Manitoba, see: Garland, S. W. and L. M. Johnson, *Crop Production Practices in Manitoba*, Economics Division, Canada Department of Agriculture, Ottawa, December 1958.

10. **Labor Earnings.**—Net returns to the farm business, when farm expenses have been deducted from total farm receipts, may be considered to be returns to the operator for his labor and management.

11. **Farm Management.**—Size of business, in our farm plans, is much larger than the sizes generally prevailing in Manitoba. Cattle are of good quality and grain yields are above average. Our farms should therefore be operated by good farm managers.

Farm Plans

Red River Area—Grain Farm

Farm Organization.—The farm plan prepared for this area represents a farm organization with all land cultivated and the cropland acreage seeded to the common grain crops. No livestock of any kind is kept on this grain farm.

This plan applies to the clay soils of the Red River association. These soils are black earth soils developed on lacustrine deposits; they are fairly deep, fertile, stone-free, and although heavy to cultivate are ideally suited for grain production. About 95 per cent of the farm land is improved. Natural shelter for livestock is limited and drinking water for livestock must be obtained from the runoff of rain or melted snow and stored in dugouts.

A four-year cropping system, with about 25 per cent of the cultivated land in fallow each year, prevails in this area. Wheat is the most important crop and is generally seeded on land which was fallow the previous year. Oats and barley cover about the same acreage and are usually seeded on stubble land. Flax is an important crop in the Red River Valley and this crop is seeded on either fallow or stubble land. Wheat yields average about 17-19 bushels an acre and vary little from year to year.

The disker has, to a large extent, replaced the oneway and disk harrow for tillage operations on fallow land and for the preparation of the seed bed. Although it is not a recommended practice, some farmers burn the stubble and straw after a heavy crop. The cropland is usually fall tilled, weather permitting.

Size of Business.—A grain farm in the Red River Valley area of Manitoba which will return $2,500 in labor earnings, to the operator, requires about 500 acres of improved land.

Receipts and Expenses.—The value of grain available for sale is as follows: wheat $3,725; oats, $1,807; barley, $1,663; and flax, $1.435. All farm receipts are derived from sales of grain.

Expenses for tillage, spraying and harvesting, including fuel, oil, grease, repairs, interest on capital investment, and allowance for depreciation amount to $2,572, or 42 per cent of total farm expenses. Interest on capital investment in real estate amounts to 27 per cent of total farm expenses.

Labor Earnings.—Sales of grain are the source of all farm receipts and amount to $8,630. Farm operating expenses total $6,123. Returns to the operator for his labor and management contributed to the farm business total about $2,500.

Capital.—Total capital investment amounts to $43,350; investment in real estate (land and buildings) accounts for about 78 per cent and investment in machinery for 22 per cent of the total.

(To be continued)

PUBLICATIONS OF THE ECONOMICS DIVISION

Provincial Agricultural Legislation in Western Canada, 1958-59 Supplement. Ottawa, January 1960. pp. 139-160.

Provincial Agricultural Legislation in the Atlantic Provinces, 1959 Supplement. Ottawa, January 1960. pp. i + 79-90.

Provincial Agricultural Legislation in Quebec and Ontario. 1958-1959 Supplement. Ottawa. January 1960. pp. ii + 81-91.

A Study of Price Determination in the Alberta Hog Market. Poetschke, Leonard E. Ottawa, March 1960. pp. 51.

This study of the hog market in the province of Alberta is organized into three main parts. The first one concerns the organization of the market and deals separately with the Alberta, Edmonton and Calgary markets. In his description of the Alberta market the author stresses the importance of this market and describes the market areas and the functions of the three types of market agents. In his description of the Edmonton and Calgary markets he concentrates his attention on market areas and channels and methods of marketing.

Part II supplies a detailed analysis of competitive forces in the hog market. The author orders his analysis under the following headings: *Competitive Position of Agents in the Market; Competitive Forces Acting in the Market; The Public Markets in Alberta;* and *Influence of Changing Volume.*

Part III concludes the description and analysis of the hog market with comments on *Variations of the Albetra Hog Prices Relative to Toronto Market Policies of the Processors* and *The Policy and Influence of the Alberta Livestock Co-operative.*

Canada—Trade in Agricultural Products with the United Kingdom, the United States and All Countries. Ottawa, May 1960. pp. 21.

The fifth in a series of annual bulletins on Canadian agricultural trade statistics. It contains seven statistical tables on Canada's trade in agricultural products with other countries.

Exports, Imports and Domestic Disappearance of Agricultural Products as a Percentage of Production—Canada, 1935 to 1958. Berthiaume, Rachel. Ottawa, May 1960. pp. 8.

A report prepared in co-operation with the Agriculture Division, Dominion Bureau of Statistics. It contains four statistical tables illustrating the relation between exports, imports and domestic disappearance of agricultural products and the total value of agricultural production, and another on the farm value of production.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

In Canada: The Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal, 34.

Yearbook of International Trade Statistics, 1958. Prepared by the Statistical Office of the U.N. Department of Economic and Social Affairs. New York, 1959. Volume I, pp. 572. Volume 2, pp. 167.

The ninth issue of the Yearbook. Volume I supplies trade data for individual countries and basic summary tables which describe each country's contribution to regional and world trade. Volume II is designed primarily for the user interested in the broader economic aspects of external trade and contains tables summarizing in terms of United States dollars the trade of the world and of regions selected for their economic importance.

Statistical Yearbook, 1959. Department of Economic and Social Affairs, Statistical Office of the U.N. New York, 1959. pp. 618.

The eleventh issue of the Yearbook. All the tables published in the 1958 edition appear in the 1959 volume, except for the tables on international tourist travel, social security schemes and medical personnel.

According to the Yearbook, world industrial activity reached new postwar peaks in 1959. The level of industrial output, excluding eastern Europe and mainland China, was about 2.5 times higher than in 1938 and much above the 1959 level, the previous record year in industrial activity.

Monthly Bulletin of Agricultural Economics and Statistics. Vol. IX, No. 3, March 1960. Food and Agriculture Organization. Viale delle Terme di Caracalla, Rome, Italy.

In addition to its *Commodity Notes* and *Statistical Tables* the March issue features an article on *International Index Numbers of Food and Agricultural Production* and another on *The United States Agricultural Surplus Disposal Program,* 1954-59 and 1960-61.

OTHER PUBLICATIONS

Methods of Correlation and Regression Analysis, Linear and Curvilinear. Third Edition. Ezekiel, Mordecai and Karl A. Fox. John Wiley & Sons, Inc., New York. 1959. pp. XV + 548.

Economists, statisticians and operations research teams are welcoming with pride and pleasure this third edition of Mordecai Ezekiel's classical treatise on correlation analysis. Ezekiel and Fox provide us with a masterful treatment of all aspects of regression analysis and of correlation analysis as a tool in the description and evaluation of regression studies. They emphasize the use of algebraic methods in determining regressions, consider the use of modern electronic computers in regression and correlation analysis and explain the new method of fitting systems of two or more simultaneous structural relations, the use of error formulas with time series, and the relation of regression methods to the analysis of variance.

Capital, Interest and Profits. Keirstead, B. S. The Macmillan Company of Canada Limited, Toronto. 1959. pp. IX + 180.

Keirstead's essay is chiefly concerned with the reallocation of productive resources to tool-making in the process of net capital formation.

In a progressive society, capital formation stems from social abstinence and the degree of abstinence depends on the richness of the society. In a "conventional" or non-progressive society, on the other hand, a "social shock" is required to initiate capital formation.

Profit expectations determine investment and investment itself, being the creation of an additional stock of tools, determines the rate of real saving and capital formation. Economic progress will therefore depend on the entrepreneurs' expectations of profits, in the private sector of the economy, and, in the remainder of the economy, on the government's policy and ability to impose forced savings and to use resources to produce social capital.

Keirstead's tightly-woven arguments are presented to the reader in two Parts. Part I has chapters on *Capital, Saving and Investment, Profits, The Theory of Interest,* and *The Equilibrium of the Firm in the Use of Capital and Capital Formation in Conventional Societies.*

Part II begins with a chapter on *Capital Formation in Conventional Societies* and is followed by another on *Newfoundland: A Case Study in Economic Development in a Conventional Society* in which the author draws from his own observations in his work for the Royal Commission on the Revision of the Financial Terms of Union. The remaining two chapters deal with *Sector Analysis: Investment, Income and Prices* and *The Theory of Investment and Certain Concepts of Cycle Analysis.*

The reader should be grateful to Professor Keirstead for his skill in probing the classical theories of capital and investment and discarding their weaknesses while building up a realistic framework for the study of capital, savings, investment, interest, income and related problems.

Productivity of Farm Resources in the Carman Area of Manitoba. Gilson, J. C. and M. H. Yeh. Technical Bulletin No. 1, September 1959. pp. 41.

Economic Aspects of Tenant-Operated Farms in Southwestern Manitoba. Glison, J. C. Research Report No. 5, February 1960. pp. 40.

An Application of Linear Programming to Farm Planning. Gilson, J. C. Technical Bulletin No. 2, March 1960. pp. 48. Department of Agricultural Economics and Farm Management, Faculty of Agriculture and Home Economics, University of Manitoba, Winnipeg, Manitoba.

In Technical Bulletin No. 1 Gilson and Yeh use the Cobb-Douglas type of production function to estimate the marginal productivity of farm resources in Canada. Their work is a pioneering attempt, in Canada, to use the tools of micro-economic theory in the analysis of production economics data.

They estimate the marginal productivity of labor, building investment, machinery and equipment investment, the cash operating expense resource, land, and livestock investment. They also discuss the efficiency of resource allocation and opportunities for improvement and the substitution of machinery for labor in farm production.

In Technical Bulletin No. 2 Gilson is concerned with the application of linear programming to the formulation of alternative organization plans under varying resource and price situations for one farm in central Manitoba.

He describes the most important aspects of linear programming and its relationship to the traditional marginal concepts, gives a simple illustration of this research method, and then proceeds to an analysis of an individual farm business and the planning of the reorganization of that farm business.

In Research Report No. 5 Gilson discusses the general aspects of tenancy in Manitoba and analyzes a sample of 80 tenant-operated farms. He gives particular attention to patterns of land use, capital investment and indebtedness; the tenant's and the landlord's annual contribution to the farm business; and the distribution of the farm receipts between tenant and landlord.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

A. H. TURNER, Director

OCTOBER 1960 Vol. XXX No. 5

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ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production[e]
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
		1935-39=100						1949=100		
1926.........	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927.........	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928.........	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929.........	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930.........	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931.........	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932.........	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933.........	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934.........	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935.........	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936.........	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937.........	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938.........	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939.........	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940.........	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941.........	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942.........	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943.........	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944.........	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945.........	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946.........	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947.........	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948.........	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949.........	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950.........	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951.........	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952.........	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953.........	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954.........	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955.........	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956.........	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957.........	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958.........	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959.........	230.6	221.2	170.7	271.6	243.0	269.5	219.1	126.5	121.1	165.4
1959										
Jan.........	229.9	221.2	163.6	278.7	249.8	260.4	218.2	126.1	122.3	159.6
Feb.........	230.9	218.3	162.7	274.0	247.7	....	....	125.7	121.2	162.0
Mar.........	230.6	216.0	162.5	269.5	245.0	....	....	125.5	120.0	161.8
April	231.2	217.3	163.5	271.0	244.7	273.0	220.2	125.4	119.3	166.2
May.........	231.2	222.3	173.6	271.0	246.9	....	....	125.6	118.5	165.4
June.........	230.6	225.4	180.2	270.6	247.8	....	....	125.9	119.1	166.1
July.........	231.0	226.3	179.7	272.8	250.6	....	....	125.9	119.2	164.8
Aug.........	231.0	222.0	169.1	274.9	241.9	275.2	218.8	126.4	120.5	164.2
Sept.........	230.9	219.1	161.1	277.0	239.9	....	....	127.1	122.4	168.3
Oct.........	230.0	215.5	163.1	267.9	236.5	....	....	128.0	124.2	171.9
Nov.........	230.2	217.2	165.2	269.1	233.9			128.3	123.8	166.7
Dec.........	229.7	215.0	166.9	263.1	230.8	....	....	127.9	122.4	169.5
1960										
Jan.........	230.5	214.6	171.6	257.7	229.4	266.7	221.9	127.5	121.6	173.5
Feb.........	230.0	212.0	172.0	252.0	226.6	....	....	127.2	120.8	170.1
Mar.........	229.6	213.6	175.1	252.2	226.7	....	....	126.9	119.4	171.9
April........	231.3	218.3	180.5	256.2	233.8	277.9	223.4	127.5	120.9	166.6
May.........	231.3	220.0	182.3	257.8	235.4			127.4	120.2	167·8
June.........	231.9	225.1	185.2	265.0	239.4	....	....	127.6	120.8	167.6
July.........	232.2	221.8	173.6	270.1	241.2	....	....	127.5	120.5	....
Aug.........	230.2	216.2	160.6	271.7	235.3	....	....	127.9	121.7	....

Note:–See earlier editions for index numbers previous to 1926

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1957—July 1958 are final with inclusion of final participation payments for Western Wheat, announced June 5th, 1959. Subsequent indexes are subject to revision.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

(e) For a detailed description of concepts, sources and methods see D.B.S. Reference Paper (61-502) Revised *Index of Industrial Production, 1935-57.*

THE ECONOMIC SITUATION

Population.—Canada's population increased to about 17,852,000 at July 1, 1960 from 17,678,000 at the beginning of the year. Ontario continued to have the largest numerical growth with an increase of 64,000 to 6,104,000. Quebec was next with an increase of 45,000 to 5,115,000, Alberta third with a rise of 20,000 to 1,288,000 and British Columbia fourth with a gain of 17,000 to 1,611,000.

External Trade.—Canada's imports from all countries in July 1960 were estimated at $426.7 million, which is 10.7 per cent lower than the $478.5 million imports in July 1959. Total exports were valued at $465 million, an increase of 8.3 per cent from the $429.4 million recorded in July last year. Exports exceeded imports by $38.3 million; in July 1959 imports had exceeded exports by $49.1 million.

For the January-July period, imports were valued at $3,235.4 million in 1960 and $3,231.9 million in 1959; exports were valued at $3,067.2 million and $2,830.7 million in the corresponding periods of 1960 and 1959, respectively.

Imports from the United States dropped to $287.6 million in July 1960 from $319.7 million in July 1959, and exports dropped to $249.3 million from $282.2 million. In the January-July period imports declined to $2,228.8 million in 1960 from $2,232 million in 1959; exports rose to $1,783.4 million from $1,779.9 million.

Imports from the United Kingdom declined to $43.7 million in July this year from $52 million in July last year; exports rose sharply to $88.9 million from $52.7 million. In the January-July period imports rose to $354.3 million in 1960 from $332.2 million in 1959; exports rose sharply to $525.2 million from $417 million.

Imports from other Commonwealth countries rose to $21.4 million in July 1960 from $20.4 million in July 1959 and rose the January-July total to $147.1 million from $130.8 million. Total exports rose to $28.2 million in July 1960 from $27.1 million in July 1959; the January-July total rose to $183.3 million in 1960 from $160.4 million in 1959.

Imports from all other countries declined to about $74 million in July 1960 from $86.4 million in July last year and to $505.2 million in January-July 1960 from $536.9 million in January-July 1959. Exports rose sharply to $98.6 million in July 1960 from $67.4 million in July 1959, bringing the January-July total to $575.3 million from $473.4 million.

Labor Income.—Canada's paid workers received about $1,586 million in June 1960 in salaries and wages and supplementary labor income. The comparative figures for May 1960 and June 1959 were $1,534 million and $1,527 million respectively. Labor income in the January-June period rose to $8,989 million in 1960 from $8,608 million in 1959.

Consumer Prices.—Canada's consumer price index (1949 = 100) rose to 127.9 from 127.5 between July and August; it stood at 126.4 in August 1959. The current rise was due largely to a move from 120.5 to 121.7 in the food index which approximated the usual July-August seasonal increase. The shelter, household operation, and "other" commodities and services indexes all edged up 0.1 per cent and the clothing index dropped 0.5 per cent.

Higher prices were reported for eggs, beef, pork, bananas and oranges; most domestic fruits and vegetables declined markedly.

Wholesale Prices.—Canada's general wholesale price index (1935-39 = 100) rose to 232.2 in July from 231.9 in June this year and 231.1 in July 1959. Higher prices for eggs, oils and fats, fresh and cured meats, furs, and livestock pushed the animal products group index to 250.5 in July from 246.0 in June. The index for the vegetable products group declined to 204.7 from 205.2. Lower prices for potatoes, micellaneous vegetable products, rubber, and grains outweighed gains recorded by most other vegetable products, particularly onions, sugar and vegetable oils.

Farm Prices.—Canada's index of farm prices of agricultural products (1935-39 = 100) rose to a new high of 241.2 in July 1960. This rise from 239.4 in June is largely attributable to a continued increase in livestock and egg prices. Lower prices for potatoes in July than in June tempered the effects of higher prices for livestock and eggs in the Maritime Provinces and Quebec.

Wheat.—Supplies of wheat remaining on or about July 1 in the four major export countries for export and carryover at the end of their respective crop years totaled 2,048.3 million bushels, compared with 2,062.9 million on July 1, 1959. July 1 supplies, in millions of bushels, with figures for July 1, 1959 in brackets, were as follows: United States, 1,313.1 (1,295.1); Canada, 543.1 (568.8); Argentina, 73.9 (88.3); and Australia, 118.2 (110.7).

Total exports of wheat and wheat flour, in terms of wheat, from the four major exporting countries in the first 11 months (August-June) of the Canadian crop year totaled 904.5 million bushels, compared with 858.2 million bushels in the corresponding period of 1959. Shipments from each country in millions of bushels, with figures for the previous August-June period in brackets, were as follows: United States, 469.8 (416.3); Canada, 259.4 (274.7); Argentina, 67.2 (95.7); and Australia, 108.1 (71.5).

Dairy Products.—The milk output in July was estimated at 1,984 million pounds, a decline of 1.6 per cent from July 1959. The January-July total rose to 10,944 million pounds, an increase of 3.1 per cent from the corresponding period of 1959.

Sales of fluid milk and cream, in milk equivalent, totaled 473.2 million pounds, both in June 1960 and June 1959 but rose by two per cent from January-June 1959 to 2,865.9 million pounds in January-June 1960.

Production of creamery butter, cheddar cheese, ice cream and evaporated milk was smaller in July 1960 than in July 1959 but larger in the January-July period of 1960 than in that of 1959. The output of skim milk was smaller in July and in the January-July periods of 1960 than in the corresponding periods of 1959. July totals, with figures for 1959 in brackets, were as follows: creamery butter, 40.4 million pounds (43.1 million); cheddar cheese, 13.9 million pounds (14.1 million); ice cream, 5.5 million gallons (6.1 million); evaporated whole milk, 34.2 million pounds (35.2 million); and skim milk powder, 19.4 million pounds (21.7 million).

January-July totals, also with figures for 1959 in brackets, were as follows: creamery butter, 191.0 million pounds (188.5 million); cheddar cheese, 61.1 million pounds (54.8 million); ice cream, 24.9 million gallons (24.6); evaporated whole milk 197.9 million pounds (189.9); and skim milk powder, 100.3 million pounds (105.1).

The production of process cheese totaled 2.9 million pounds in July 1960 compared with 4.9 million in June 1960 and 3.3 million in July 1959. The January-July output rose to 29.9 million pounds in 1960 from 28.4 million in 1959. Stocks held by manufacturers totaled 2.3 million pounds at the end of July 1960 compared with 2.9 million a month earlier and 2.1 million a year earlier.

Poultry and Eggs.—Poultry, on Canadian farms (excluding Newfoundland), declined to about 75.6 million birds at June 1, 1960 from 81.8 million a year earlier. The number of hens and chickens dropped to 68.8 million from 73.5 million, turkeys to 6.2 million from 7.6 million, geese to 296,000 from 308,000, and ducks to 381,000 from 405,000.

Egg production was estimated at 35.5 million dozen in July 1960, compared with 35.3 million dozen in July 1959. The January-July total declined to 266.5 million dozen in 1960 from 278.4. million dozen in 1959.

CROP AND LIVESTOCK INSURANCE IN CANADA

D. W. Ware [1]

The function of insurance is to distribute risks in such a way that their effect on an individual or business may be reduced to a minimum. Basically, it is a method of co-operation among members of a group subjected to a common risk whose frequency can be calculated within given limits. The group as a whole assumes and distributes the risk and thus reduces its impact on each individual member.

The success of insurance depends on empirical knowledge sufficient to permit the calculation of the probability of each of several possible outcomes, the ability to spread the risk over a large area or group and over a long period of time. Its cost must not be prohitive to a large number of persons. A loss, when it does occur, must be worth insuring against and the risk must be such that neither the insured nor the insurer can hasten or prevent its occurrence.

Some of the risks faced by farmers in the operation of their businesses are common to all sectors of the economy whereas others specifically relate to the farming community. The risks of loss from fire, wind, flood, accident or illness fall in the first category whereas losses from drought, hail, insects, disease and frost are common to the second.

Other factors peculiar to agriculture, like the wide geographical dispersion of farms, tend to add to the expense of writing insurance and settling claims. Lack of basis yield and loss data has hindered the development of crop insurance schemes and has made the insuring of farm risks more costly.

Our purpose, in writing this article, is to supply our readers with a brief description of the major types of crop and livestock insurance available to Canadian farmers.

Wildlife Crop Damage Insurance

Ducks and other wild birds and animals do increasing damage to cereal crops in certain areas of Saskatchewan. To counteract the work of these predators the government of Saskatchewan, in 1953, initiated a program of financial protection. This program is financed through a $1.00 impost on each hunting licence sold within the province and a two per cent premium paid by the participating farmers.

The coverage offered ranges from $5.00 to $25.00 an acre. The farmer pays two per cent or 20 cents for a coverage amounting to $10.00 an acre. Losses are adjusted on the same basis as for hail insurance. For example, if a farmer had a 100-acre field insured for $5.00 an acre and if 50 per cent of his crops were destroyed on 20 acres, he would be compensated at the rate of $2.50 an acre or receive a total of $50.00.

Table 1 supplies a numerical description of experience under this scheme from 1953 to 1959.

Losses in 1959 were particularly heavy because much of the crop remained unharvested through the winter. Premiums paid by farmers in the 1953-59 seven-year period totaled $57,889 or 17 per cent of a total indemnity of $344,696. It is thus evident that the levy on hunting licences has been the larger contributor, by far, to the financing of the program.

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[1] Much of the information contained in this article is based on unpublished data assembled by R. C. Gilstorf, Dominion Bureau of Statistics, and formerly with the Economics Division.

Table 1.—Wildlife Crop Insurance, Saskatchewan, 1953-1959

Year	Farmers insured	Total liability	Premiums paid	Claims	Losses paid
	— number —	— dollars —		— number —	— dollars —
1953	20	21,500	1,065	9	2,388
1954	30	34,310	1,715	13	8,566
1955	144	188,761	5,678	34	14,725
1956	245	460,295	9,456	122	40,018
1957	335	582,050	11,626	173	59,348
1958	432	717,093	14,349	206	69,651
1959[a]	407	674,230	14,000	275	150,000

[a] Preliminary.

Hail Insurance

Hail insurance is sold to Canadian farmers by private companies, co-operatives, municipal hail associations and provincial government agencies. Cereal crops constitute the bulk of the acreage insured but specialty crops such as tobacco, canning crops and tree fruits are also covered.

The first farmers' mutual hail insurance company in Canada was set up in Manitoba in 1899. Private companies entered the field in 1906 and municipal hail insurance was established in Saskatchewan in 1912 and in Alberta in 1914.

Federal and provincial regulations govern the nature of hail insurance schemes. Companies with Federal licences must comply with the regulations of the two levels of government. Municipal hail associations and mutual companies are organized within the laws of the respective provinces.

Private companies are permitted by law to form associations to pool their operations through district offices. In sparsely settled districts this leads to reduced costs and lower premiums. In general between one quarter and one third of the premiums are required for operation costs. The companies pool their hail experience data, use the same policy forms, charge the same rates and co-operate in the adjustment of losses. A company may reinsure against any risk undertaken by it, thereby spreading the risks.

Protection.—Protection against hail losses takes the form of a certain coverage or indemnity per acre. It differs from most other types of insurance in that the value of the article being insured has no bearing on the contract. The only stipulation for payment is that the crop must have been harvestable. If the insured crop was harvestable before the damage then insurance is paid on a percentage basis in accordance with the percentage of the crop destroyed by hail[1]. For example, a crop insured at the rate of $20.00 an acre, damaged to the extent of 50 per cent, would receive an indemnity of $10.00 an acre regardless of whether it was a 40 or a 10-bushel an acre crop. The most common amount of coverage sold is between $5.00 and $20.00 an acre.

Premiums.—Originally, in the Prairies the practice was to charge a flat provincial rate. Experience and improved statistical data led to the development of the more flexible system now in use, in which the township is the basic area.

The premium rates charged vary among areas and among crops. The rates are based on the incidence of hail damage in each area. Among townships, the basic premium rate for cereal crops may range from three to 15 per cent of the indemnity coverage. In other words, the premium rates charged depend on the losses incurred.

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[1] Elder, J. G., *A Short History of the Development of Hail Insurance in Alberta*, Calgary, The Alberta Hail Insurance Board, 1945, p. 3.

An applicant for hail insurance must have an insurable interest in the crop he wishes to insure, either as an owner, or as a landlord, tenant or mortgagee. He must be able to show that if the crop were destroyed by hail he would suffer a direct monetary loss.

Types of Policies.—The types of policies offered by hail insurance companies are "full cover", "10 per cent deductible" and "25 per cent deductible".

The full cover policy pays the insured the total percentage of the loss sustained on every insured acre, where the damage from hail amounts to five per cent or more and where the total award amounts to $10.00 or more. The minimum loss and the minimum award are established by provincial law and are designed to discourage the filing of trivial claims which would increase administrative costs and, thus, premiums.

The 10 per cent deductible policy reimburses the insured for losses in excess of 10 per cent on any portion of the insured acreage. The insured agrees to stand the first 10 per cent of the losses. Under this type of insurance the premium charged is 25 per cent lower than that charged under the full cover policy.

The 25 per cent deductible policy reimburses the insured for losses in excess of 25 per cent. A 50 per cent reduction in the premium rate is given under this plan. The deductible policies are popular in high risk areas, with farmers who are prepared to withstand small hail losses but wish to protect themselves against excessive damage.

Table 2 shows the amount of hail insurance written in Canada. Saskatchewan farmers lead farmers in all provinces in terms of net premiums and claims. Farmers in Alberta, Ontario and Manitoba are also large purchasers of hail insurance.

Municipal Hail Insurance.—The first government-operated hail insurance scheme was set up by the Territorial Government of the Northwest Territories in 1902. This service was discontinued in 1905 when the provinces of Saskatchewan and Alberta were created. Saskatchewan passed its "Hail Insurance Act" in 1912 and the Hail Insurance Commission began operations in 1913. This Commission lasted until 1916 when it became unable to meet its heavy losses.

Saskatchewan Municipal Hail Insurance Association[1].—The Hail Insurance Act of 1912 enabled the ratepayers of a rural municipality to pass a bylaw enabling this municipality to join with other municipalities to provide the crop owners with hail insurance coverage not exceeding $5.00 an acre. In 1913 there were 115 municipalities under the bylaw and in all a uniform rate of four cents an acre was charged against all lands of an owner (except fenced pasture).

The Municipal Hail Insurance Asociation was organized in 1917 under the Municipal Hail Insurance Act. Hail damage was severe in 1918 and the Association's experience was similar to that of the Commission in 1916 but a pro rata payment of 80 per cent was made to all claimants. In 1919, the over-all flat rate of four cents an acre was continued but an additional rate of a given number of cents an acre was levied on the crop on all lands under the scheme over and above an exemption of 40 acres per quarter section. This plan remained in effect until 1924 when varying crop rates over and above the flat rate of four cents an acre were levied and the exemption of 40 acres per quarter section discontinued. A system of rating, by townships, was introduced in 1945 and is still in existence. Since 1918 the Association has not found it necessary to make a pro rata payment and has built a strong reserve.

Procedure.—Any municipality in Saskatchewan may join the Association but participation is voluntary. Once a municipality has decided to join, by a vote of the majority of the electors, it follows the procedure required and becomes subject to the provisions of the Act. All persons are liable to be assessed for a rate or rates, per acre, on all land along with additional rate or rates to be levied on all land in crops. In 1959, the Association insured 29 per cent of the acreage sown to cereals in Saskatchewan for $6.00 an acre. The rates charged ranged between 15 to 90 cents an acre or between 2.5 and 15 per cent.

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[1] For a more detailed description, see Hingley, E. G., *Municipal Hail Insurance*, Regina, Commercial Printers, 1960.

Each person liable to assessment under the Act must report the number of acres in crops or to be cropped by June 10 of each year. The insurance premiums are charged against the land as taxes and collected in the same manner as municipal taxes.

Any landowner may withdraw all his land but not only part of it, from the provisions of the bylaw by written notice to the secretary before May 1, in any year. Moreover, when an insured crop is destroyed in any other manner than by hail, the owner may withdraw this crop from the provisions of the bylaw, for the current year, if he applies by July 31. In such a case he is entitled to a proportionate rebate on the premium paid.

Table 2.—Hail Insurance Premiums and Claims by Regions, Canada, 1958 and 1959

	Premiums		Claims	
	1958	1959	1958	1959
		— dollars —		
Atlantic provinces	946	111	—	—
Quebec	37,929	34,185	35,369	3,027
Ontario	1,825,921	1,619,187	548,221	1,158,603
Manitoba	913,601	1,034,494	92,828	324,339
Saskatchewan[a]	4,563,194	5,836,579	1,431,454	4,641,163
Alberta[b]	1,779,460	2,111,299	867,986	489,793
British Columbia and Yukon	155,420	116,105	126,296	53,555
Canada	9,276,471	10,751,960	3,102,154	6,670,480

[a] Includes coverage by Saskatchewan Government Insurance Office, the Saskatchewan Municipal Hail Insurance Association and private companies.

[b] Includes operations of the Alberta Hail Insurance Board.

Indemnification for Losses.—The Board, not later than May 1 each year, sets a basic amount of indemnity, per acre, to be payable for losses in the said year, not exceeding $6.00 an acre. In addition to this basic amount the Board may set an additional amount not exceeding $4.00 an acre. This dual rate was established to provide extra hail insurance to farmers who so wish, apply and pay for it.

Insured crops are covered for the June 10-September 30 period; the coverage applies to the crop before cutting and also while lying in the swath or in sheaves before threshing.

If his crops are damaged by hail the claimant must notify the Association, by registered letter, within three days after the damage. He must state the number of acres, the percentage of damage done, and have the claim verified by a neighbor. If the loss is less than 10 per cent of the crop in the hailed area, the cost of inspection is paid by the claimant. Total indemnity is paid if the damage is 85 per cent or more. All losses are paid by December 15 of that year. The only stipulation for payment of an award on a hailed crop is that the crop must have been harvestable.

A summary of the 1959 operations of the Saskatechewan Municipal Hail Insurance Association is given in Table 3.

The Alberta Hail Insurance Board.—A government hail insurance plan was in operation in Alberta between 1906 and 1911. Premiums collected during this period totaled $370,648 and claims paid out $860,192. Because of this loss of $489,544 the government withdrew from the hail insurance business and licensed private companies to carry on. They have done so with varying degrees of success.

In 1914 compulsory municipal hail insurance was introduced in 26 municipal districts. This plan was financially sound but its compulsory features made it unpopular; in 1923 it was established on a voluntary basis in all districts.

Between 1926 and 1936 the rates charged varied from five to 20 per cent, according to hail damage in the district. In 1936 the plan failed because of insufficient reserves and poor collection of premiums during the depression years. Because of lack of reserves the rates charged in the 1930s were higher than those of private companies; farmers then turned away from the Board.

Table 3.—Hail Insurance Operation, Saskatchewan Municipal Hail Insurance Association, 1959

Number of farmers insured	37,328	
Number of acres insured	6,745,961	
Total liability	$40,475,764	
Net premiums	$ 2,218,481	
Number of claims filed	4,904	
Awards paid	$ 2,112,858	
Ratio, Loss to risk		5.2 per cent

Source: Annual Report, *The Saskatchewan Municipal Hail Insurance Association, 1959.*

The Alberta Hail Insurance Board was organized in 1938 as a non-profit co-operative mutual organization and has continued to operate as such. Farmers may insure their crops, on a voluntary basis. As security for the payment of premiums the Board holds a crop lien on all grain grown by a policyholder. The Board has grouped townships according to the extent of previous losses and set rates accordingly. The limit of insurance is $10.00 an acre in the most hazardous areas and $20.00 in the least hazardous ones. Discounts are allowed if the premiums are paid in cash. The acreage insured and claims paid in 1958 and 1959 are listed in Table 4.

British Columbia Fruit Growers Mutual Hail Insurance Company.—An illustration of how farmers in areas other than the Prairies have dealt with the problem of hail is given by the experience of the British Columbia Fruit Growers Mutual Hail Insurance Company. Generally, hailstorms are not as severe in the Okanagan Valley as on the prairies but a tree fruit crop may be severely damaged by a light hail storm which would not damage a grain crop. Tree fruits cover only a limited area, have a high value per acre and are grown in widely separated localities. Thus, the differences in problems encountered stem from geography and the kind of crops produced. The British Columbia Fruit Growers Mutual Hail Insurance Company was incorporated by the British Columbia Legislature in 1950. It is limited to orchardists who are members of the British Columbia Fruit Growers Association and have purchased at least one $10.00 share. No interest is paid on shares. Shareholders are represented through a system of elected area delegates.

Table 4.—Hail Insurance, Alberta Hail Insurance Board, 1958 and 1959

	1958	1959
	— dollars —	
Acres insured	1,645,591	2,107,124
Risk	13,067,838	17,190,422
Premiums	1,098,821	1,406,589
Acres damaged	112,875	125,537
Number of claims	958	1,067
Claims paid	523,644	383,718

Source: *Alberta Hail Insurance Board.*

The premiums charged vary from 6.5 per cent per $1,000 of insurance in the high risk areas to three per cent per $1,000 in the low risk areas. The company underwrites about five million dollars of risk each year, the amount varying with the size and value of the crop. Its membership includes about half of the commercial fruit growers in the region and refunds have been made by the company in six of the past ten years.

Crop Insurance

To provide crop insurance to all Canadian farmers Parliament passed the Crop Insurance Act on July 18, 1959. This Act enables the Minister of Agriculture to enter into agreements with the provinces to provide for payment by Canada to the provinces, of costs incurred in the operation of crop insurance schemes.

The contributions and loans provided by Canada to the provinces are: *a*) payment of 50 per cent of administration costs, *b*) payment of 20 per cent of the premiums and *c*) loans to the provinces of 75 per cent of the amount required to meet indemnity commitments, less $200,000.

These contributions by the federal to the provincial governments are available on conditions that a minimum number of farmers enter the scheme and that they be insured up to 60 per cent of the long-term average yield of the area.

Where applicable, farmers are not eligible for both crop insurance and P.F.A.A. payments. As envisioned all kinds of crops will be insurable.

The Manitoba Act.—In August 1959, with the passage of the "Crop Insurance Test Areas Act" Manitoba became the first province to organize a provincial crop insurance agency. Four areas were selected to begin crop insurance on an experimental basis. These areas are located in the northern central and southwestern parts of the province and represent areas with different yield characteristics.

The legislation provides for insurance against losses by hail, drought, flood, frost, wind, disease and pests suffered by wheat, oats, barley and flax crops. About 340,000 acres were insured in 1960.

The following example may help understand how the scheme operates. Let us assume that a farmer insures 100 acres of wheat in an area where 60 per cent of the 35-year average yields is 11 bushels an acre. In the fall, because of a crop disease, he harvests six bushels an acre or five bushels less than the insured amount per acre. The Agency will then reimburse the farmer for 500 bushels at that year's initial Wheat Board price at the local delivery point, basis in store Fort William or Port Arthur.

The premiums paid by farmers for crop insurance vary from test area to test area and by townships within the test areas. They range from a low of 5.25 per cent to a high of 12 per cent of the coverage offered. The prices used to determine the premiums are the average initial Canadian Wheat Board prices for the previous year.

Livestock Insurance

Mortality Insurance.—The first mortality insurance scheme was set up in 1907. This type of insurance is designed to insure good breeding stock rather than commercial animals. In 1959 five companies were selling livestock insurance; the premiums collected totaled $339,251. One can thus readily see that the livestock mortality insurance business is smaller than the hail insurance business.

Mortality insurance is available for horses, dairy and beef cattle, either purebred or grade but is not usually available for sheep, hogs or range cattle. Livestock may be insured on home location or in the vicinity or while being transported or exhibited. Loss by death resulting directly from disease, accidental injury, fire, lightning, wind, or authorized destruction is covered. Mortality policies also cover the hazards of calving or foaling. Animals shipped by air are insured at higher rates than animals shipped by rail, truck or sea transport.

Livestock mortality policies do not cover loss resulting from any operation unnecessary for the preservation of life such as castration or dehorning.

Premium rates are on a flat rate basis and calculated according to the value listed for each animal. At the time of application for coverage the insuring agency requires evidence from a veterinarian that the animals to be insured are in good health.

Some companies offer insurance on an individual animal basis or on a deductible herd basis. Lower rates are charged on the deductible herd coverage plan but the assured stands the first loss or losses until such losses equal the premium paid to the company. The minimum number of animals insurable under the herd plan is 15 and all insurable animals in any particular herd must be insured. No individual animal may be insured for an amount in excess of 15 per cent of the total amount of the schedule.

A floater type of policy is also available for livestock. It is sold only to farmers, not drovers or cattle dealers. Under this type of insurance limited protection is also available for hogs and sheep while in transit for exhibition purposes. The floater policy insures the livestock of the assured while located within the province in which the assured resides, either off or on the farm premises and while in transit by rail or motor within Canada. The contract does not compensate for death or illness from disease but only for disability or death from fire, lightning, wind or collision. It is thus cheaper than a mortality policy.

The premiums paid by farmers for livestock insurance in 1959 totaled $339,107 and the claims paid $286,988. Between 50 and 65 per cent of the policies are purchased in Ontario (Table 5).

Railways Transit Insurance.—An additional type of insurance coverage available for livestock is transit insurance provided by the railway companies. This coverage is available for both commercial and exhibition livestock. Commercial livestock shipped by rail are shipped "under owner's risk" and special low commodity freight rates then apply. The bill of lading contract provides for a miminal value for livestock accidently killed or maimed in transit.

Greater compensation payments are provided by the railway companies if the animals are shipped "under carrier's risk". Under carrier's risk the shipper pays double the special commodity freight rate payable under owner's risk

Table 5.—Livestock Insurance, Net Premiums and Net Claims by Regions, 1958 and 1959

Region	Premiums		Claims	
	1958	1959	1958	1959
	— dollars —			
Atlantic provinces	3,720	6,046	192	200
Quebec	45,416	65,584	27,353	42,564
Ontario	259,307	172,421	101,602	204,219
Prairie provinces	60,893	69,174	28,051	33,614
British Columbia	23,802	25,882	13,512	6,391
Canada	393,138	339,107	170,710	286,988

Source: Department of Insurance, Ottawa.

and in return the companies assume full responsibility for safe delivery of the animals. If an animal is killed the railway companies compensate the shipper at the actual value declared on the bill of lading.

Transit insurance may be obtained by livestock dealers from private insurance companies at selected stockyard points in Canada. This is a selective type of insurance used mainly for rail shipments of commercial livestock from western to eastern Canada.

Prairie Farm Assistance Act

The Prairie Farm Assistance Act applies to the provinces of Manitoba, Saskatchewan and Alberta and to the Peace River block in northeastern British Columbia. This Act was passed by the Parliament of Canada in 1939.

The purpose of the P.F.A.A. is stated in the title: an "Act to Assist Agriculture in the Prairies". The Act may have some of the features of crop insurance legislation but its chief intent is to supply financial relief or compensation. Payments to farmers are not large enough to insure against all losses or to cover all operating expenses in the event of a crop failure. They are intended only to assist with a relief problem which the provinces could not handle alone and to aid farmers to put in a crop the following year.

The program began in 1939 and up to March 31, 1959, $225 million had been paid to farmers. Direct contributions by farmers amounted to $110 million. Of the total paid out $153 million or 68 per cent had been paid to farmers in Saskatchewan which reflects the high variability of crop yields in that province.

How the Act Operates.—The average yield of wheat in a township (an area six miles square, consisting of 36 sections each containing 640 acres) or block (an area of six or more sections) is the basis on which payment are made. The categories of payment are:

a) if the average yield of wheat in a township is more than eight but not more than 12 bushels an acre, the award is two dollars an acre of the farmer's cultivated land for each cent, or fraction thereof, not exceeding ten, by which the average price is less than 80 cents a bushel;

b) if the average yield of wheat is more than five and not more than eight bushels an acre, the award is two dollars an acre;

c) if the average yield of wheat is more than three and not more than five bushels an acre, the award is three dollars an acre;

d) if the average yield of wheat is not more than three bushels an acre the award is four dollars an acre.

Maximum Payment.—No award is made for more than 200 acres of the cultivated land of the farmer. Thus, the maximum payment will be $400, $600 or $800 depending on average yields. Lands such as ranches and experimental farms are excluded from the provisions of the act. If the average wheat yield in a given block or township is such that it qualifies for payment then all farms within that block are eligible no matter what their yield.

Calculation of Average Yield.—To determine if a township is eligible for an award, the entire yield of the township is included but in calculating the average yield in an eligible township to ascertain the amount of the award all sections having an average yield of 12 or more bushels are excluded. The minimum size an area must have to qualify for award is 12 sections. Where less than ten per cent of the cultivated area in a township is sown to wheat the predominating crop of any other grain may be used as a yield indicator.

Method of Financing.—Farmers contribute one per cent of the purchase price paid for all grain by country elevators, grain dealers and other agents. The grains include wheat, oats, barley, rye, flax and rapeseed. This money is placed in the Prairie Farm Emergency Fund and is used to pay those farmers who experience a crop failure. Additional funds required are advanced from the Federal Treasury. Administrative costs are paid by the Federal Government.

Conclusion.—A review of crop and livestock insurance in Canada indicates that some of the programs are well established whereas others are still in their infancy. Private, co-operative and government sponsored schemes have been established to meet the needs of Canadian farmers. In the beginning of this century many companies or plans failed because they were insuring both yield and price. Numerous problems remain to be solved. The ideal situation would be where all farmers who face similar risks would pay similar premiums.

RESOURCE REQUIREMENTS ON SOME TYPES OF FARMS IN MANITOBA (cont'd)

J. G. MacKenzie and S. W. Garland

South Central Area—Grain and Grain-Beef Farms

Farm Organization.—Farm plans for two types of farm organization have been prepared for this area: the first plan is for a farm with a large part of the land under cultivation and all the cropland seeded to the common grain crops. No livestock of any kind is kept on this farm. The second plan is for a farm with considerable unimproved land which provides native pasture and hay for a beef-cattle enterprise. Part of the improved land will be seeded to grasses for additional pasture and hay. Cattle are the only livestock kept on this grain-beef farm.

The soils are Pembina clay loams and Manitou clay loams. These degraded black earth soils were highly fertile and of good depth in their original state. Topography ranges from broadly rolling to hilly and water erosion frequently occurs. The steeper slopes benefit from periodic seeding of grass; the more hilly portions probably should be permanently seeded to grass. About 75 per cent of the farm land is improved.

A three-year cropping system, with one-third of the cultivated land in fallow each year, is most common in this area on both grain and grain-beef cattle farms. Wheat is the most important crop and barley the next most important one. Flax is not grown extensively. Wheat yields average 20-22 bushels an acre and vary little from year to year. On the grain-beef farms part of the improved land is usually seeded to grass for either pasture or hay. This grass land is usually seeded down for an indefinite period. Cropland is usually fall-tilled, weather permitting.

On many farms the heifers and steers are grain-fed and marketed in the late winter or early spring at about two years of age. When cows are sold they are usually marketed off grass in the fall.

Size of Business.—A grain farm in the south central area of Manitoba which will return $2,500 in labor earnings to the operator should have about 480 acres of improved land. A grain-beef farm, on the other hand, should have about 480 acres of land, of which 85 acres are unimproved, and a herd of beef cattle with 22 cows.

Receipts and Expenses.—On the grain farm the value of grain available for sale is $4,275 for wheat, $1,419 for oats and $2,533 for barley. The corresponding figures for the grain-beef farm are $2,972, $965 and $1,887 respectively. The grain-beef farm also has receipts of $330 from the sale of cows, $1,717 from steers and $1,009 from the sale of heifers. Either type of farm has no other source of receipts.

Expenses on the grain farm for tillage, seeding, spraying, and harvesting amount to $2,621 or 46 per cent of total farm expenses. Interest on capital investment in real estate amounts to 24 per cent of total farm expenses.

On the grain-beef farms expenses for tillage, seeding, spraying, and harvesting amount to 28 per cent of total farm expenses, interest on capital

Table 1.—Operating Statement for a Grain Farm with Operator's Annual Labor Earnings of $2,500 on the Clay Soils of the Red River Association, Red River Valley Area of Manitoba

Land use	Land use and crop program					Returns to labor and management
	Acres	Total yield	Seed	Sales		
				Amount	Value	
		bushels		bushels	dollars	
Wheat	126	2,868	208	2,660	3,725	Farm receipts.....$8,630
Oats	107	3,531	294	3,237	1,807	
Barley	97	2,134	160	1,974	1,663	Farm expenses..... 6,128
Flax	45	500	31	469	1,435	
Fallow	125	....	....	....	....	
Total	500	....	....	....	8,630	Labor earnings....$2,502

Farm operating expenses		Capital	
Machinery[a]	$2,572		
Grain hauling	444	Real estate (land, buildings)	$33,625
Seed grain: clean, haul	82		
Car: farm share	236		
Hydro and telephone	50	Machinery	9,725
Insurance and depreciation: buildings	227		
Interest: real estate	1,681		
Miscellaneous[b]	83		
Taxes	625		
Labor: hired	128		
Total	$6,128	Total	$43,350

[a] Includes fuel, repairs, interest and depreciation, and weed spray.

[b] Includes machinery and equipment other than grain crop machines, and insurance on tractors and combine.

investment in real estate 19 per cent, expenses directly related to the cattle enterprise 18 per cent, and costs of harvesting hay nine per cent.

Labor Earnings.—Total farm receipts amount to $8,227 on the grain farm and $8,880 on the grain-beef farm. Farm operating expenses total $5,707 on the grain farm and $6,377 on the grain-beef farm. Returns to the operator for labor and management contributed to the farm business total $2,500 on both the grain and the grain-beef farms.

Capital.—Capital requirements for the grain farm amount to $37,100. Of this total amount, investment in real estate (land and buildings) makes up about 74 per cent and machinery 26 per cent.

Capital requirements for the grain-beef farm amount to $37,445. Of this total amount, investment in real estate makes up about 65 per cent, machinery 29 per cent, and cattle (basic herd) six per cent.

Western Area—Grain-Beef Farm

Farm Organization.—The plan for this area is for a farm with the cropland acreage seeded to the common grain crops and the unimproved land used to provide pasture and hay for a beef-cattle enterprise. Cattle are the only livestock kept on this farm.

The soils are Oxbow loam soils; they are black earth soils developed on boulder till and gently undulating. About 65 per cent of the land is improved. The unimproved land is made up of meadow land, sloughs, bluffs, and natural water runways.

Table 2.—Operating Statement for a Grain Farm with Operator's Labor Earnings of $2,500 on the Pembina Clay Loams and Manitou Clay Loams in the South Central Area of Manitoba

Land use	Land use and crop program					Returns to labor and management
	Acres	Total yield	Seed	Sales		
				Amount	Value	
		bushels		bushels	dollars	
Wheat	130	3,250	186	3,064	4,275	Farm receipts.....$8,227
Oats	78	2,730	172	2,558	1,419	
Barley	119	3,232	209	3,023	2,533	Farm expenses..... 5,707
Fallow	153					
Total	480				8,227	Labor earnings....$2,520

Farm operating expenses		Capital	
Machinery[a]	$2,621	Real estate (land, buildings)	$27,525
Grain hauling	449	Machinery	9,575
Seed grain: clean, haul	65		
Car: farm share	236		
Hydro and telephone	50		
Insurance and depreciation: buildings	227		
Interest: real estate	1,376		
Miscellaneous[b]	83		
Taxes	480		
Labor: hired	120		
Total	$5,707	Total	$37,100

[a] Includes fuel, repairs, interest and depreciation, and weed spray.

[b] Includes machinery and equipment other than grain crop machines, and insurance on tractors and combine.

A three-year cropping system, with about one-third of the cultivated land in fallow each year, is most common in this area. Wheat is the most important crop and is generally seeded on land which was fallow the previous year. Oats is next in importance and is usually seeded on stubble land. Farm operators who have large herds of cattle make a practice of cutting part of the oats crop for green feed. Barley is grown on both fallow and stubble land. A large acreage of flax is grown in this area and this crop is usually grown on stubble land. Wheat yields average 15-16 bushels an acre and vary greatly from year to year depending on rainfall during the growing season.

Cropland is usually fall-tilled, weather permitting. Wind erosion is a problem in the drier years and trash cover is usually maintained on the fields.

In this area heifers and steers are marketed both in the fall off grass and in the late winter after being grain-fed. In the farm plan all heifers and steers are grain-fed and marketed in late winter. When cows are sold they are marketed off grass.

Size of Business.—A grain-beef farm that will return $2,500 in labor earnings to the operator should have about 1,125 acres of land, of which 370 acres

Table 3.—Operating Statement for a Grain-Beef Farm with Operator's Labor Earnings of $2,500 on Pembina Clay Loams and Manitou Clay Loams in the South Central Area of Manitoba

Land use	Land use and crop program					Cattle numbers and sales			
	Acres	Total yield	Seed	Sales		Class	Inventory (summer)	Sales	
				Amount	Value			No.	Value
		— bushels —		bushels	dollars		number		dollars
Wheat	85	2,252	122	2,130	2,972	Cows	22	3	330
Oats	50	1,850	110	1,740	965	Heifers	10	7	1,009
Barley	85	2,042	150	2,252	1,887	Steers	10	10	1,717
Hay improved						Calves	20		
Pasture improved	85	90 tons							
Fallow	95								
Unimproved	80	10 tons							
Total	480				5,824	Total	62	20	3,056

Farm operating expenses	
Machinery[a]	$1,758
Grain hauling	271
Harvesting hay[b]	601
Seed grain: clean, haul	44
Grass seed	76
Cattle enterprise[c]	1,119
Car: farm share	251
Hydro and telephone	60
Insurance and depreciation: buildings	298
Interest: real estate	1,214
Miscellaneous[d]	196
Taxes	408
Labor: hired	81
Total	$6,377

Returns to labor and management		
Farm receipts:		
Grain	$5,824	
Cattle	3,056	
Total		$ 8,880
Farm expenses		6,377
Labor earnings		2,503
Capital		
Real estate (land, buildings)		$24,275
Machinery		10,750
Cattle (basic)		2,420
Total		$37,445

[a] Includes fuel, repairs, interest and depreciation, and weed spray.
[b] Includes charge to custom bale hay.
[c] Includes veterinary, breeding fees, value of home-grown grain fed, and interest on investment for basic herd.
[d] Includes machinery and equipment other than grain crop machines, insurance on tractors and combine, and fencing.

are in native hay and pasture, and a herd of beef cattle with 25 cows.

Receipts and Expenses.—The value of wheat available for sale amounts to $4,273; corresponding figures for oats, barley and flax are $1,068, $2,020 and $1,266 respectively. Receipts amount to $441 from the sales of cows; $2,060 from sales of steers and $1,009 from sales of heifers. There is no other source of receipts on this farm.

Expenses for tillage, seeding, spraying, and harvesting amount to $3,934 or 41 per cent of total farm expenses. Expenses directly related to the cattle enterprise are next in importance and amount to 14 per cent of this total, real estate 13 per cent, and hay and other feed costs eight per cent.

It may be noted that a large acreage, 755 crop acres and 370 unimproved acres, is required for a grain-beef farm in the western area of Manitoba. Crop yields are fairly low in this area. Many fields are small and irregular, broken by innumerable bluffs and sloughs; machinery operating costs are thence high and reduce the net returns per acre.

Labor Earnings.—Total farm receipts amount to $12,137 and total farm operating expenses to $9,629. Returns to the operator for labor and management contributed to the farm business amount to about $2,500.

Table 4.—Operating Statement for a Grain-Beef Farm with Operator's Labor Earnings of $2,500 on Oxbow Loams in the Western Area of Manitoba

Land use	Land use and crop program					Cattle numbers and sales			
	Acres	Total yield	Seed	Sales		Class	Inventory (summer)	Sales	
				Amount	Value			No.	Value
		bushels		bushels	dollars		number		dollars
Wheat.......	200	3,400	308	3,092	4,273	Cows	25	4	441
Oats (grain).	90	2,250	297	1,953	1,068	Heifers	11	7	1,009
(forage)	45	60 tons	....	....	....	Steers	12	12	2,060
Barley......	120	2,650	211	2,439	2,020	Calves	23	......	....
Flax........	50	450	34	416	1,266	....	....	......	....
Fallow......	250	....	....	....	....	....	....	......	....
Unimproved	370	60 tons	....	....	....	....	....	......	....
Total.....	1,125	....	....	....	8,627	Total	71	23	3,510

Farm operating expenses	
Machinery[a]	$3,934
Grain hauling	439
Harvesting hay	775
Seed grain: clean, haul	100
Cattle enterprise	1,327
Car: farm share	251
Hydro and telephone	60
Insurance and depreciation: buildings	319
Interest: real estate	1,306
Miscellaneous[b]	216
Taxes	716
Labor: hired	186
Total	$9,629

Returns to labor and management		
Farm receipts:		
Grain	$8,627	
Cattle	3,510	
Total		$12,137
Farm expenses		9,629
Labor earnings		2,508
Capital		
Real estate (land, buildings)		$26,130
Machinery		10,450
Cattle (basic herd)		2,750
Total		$39,330

[a] Includes fuel, repairs, interest and depreciation, and weed spray.

[b] Includes machinery and equipment other than grain-crop machines, insurance on tractors and combine, and fencing.

Capital.—Capital investment amounts to $39,330. Of this total amount, investment in real estate makes up about 66 per cent, machinery 27 per cent, and cattle (basic herd) seven per cent.

Interlake Area—Beef-Cattle Farm

Farm Organization.—The plan for this area is for a farm with all the land used to provide pasture and hay for a beef-cattle enterprise. None of the land is cultivated and no tame hay is produced. Cattle are the only livestock kept on this farm.

The farm plan applies to areas in Manitoba with extensive stretches of meadow land which lie below the 850-foot contour line on the east side of Lake Manitoba. There are many other areas in Manitoba, particularly along the northerly part of the west side of Lake Manitoba, with similar physical characteristics and productivity for native pasture and hay on which this farm plan would apply.

Farm operators do not rotate grazing periods, spray scrub, or otherwise improve the productivity of the meadow land. Native hay is usually cut with a power mower and stacked in the field with an over-shot stacker. During the winter this hay is hauled to the barns or feed sheds.

There is no home-grown grain. A small quantity of oats is purchased each year and fed to calves during the winter months. The soils are deficient in phosphorous. The cattle have to be given free access to a phosphate mineral supplement during the winter.

Table 5.—Operating Statement for a Beef-Cattle Farm with Operator's Labor Earnings of $2,500 on Meadow Land Along the East Side of Lake Manitoba

Land use	Land use and crop program					Cattle numbers and sales			
	Acres	Total yield	Seed	Sales		Class	Inventory (summer)	Sales	
				Amount	Value			No.	Value
		tons		tons	dollars		number		dollars
Native hay....	465	280	....	....	....	Cows......	70	9	991
Native pasture.	735	....	....	....	....	Heifers....	32	23	2,388
						Steers.....	31	31	3,645
						Calves....	63	......	....
Total.........	1,200	....	....	....	....	Total.....	196	63	7,024

Farm operating expenses	
Harvesting hay	$1,048
Cattle enterprise	1,987
Car: farm share	251
Hydro and telephone	60
Insurance and depreciation: buildings	159
Interest: real estate	285
Miscellaneous[a]	309
Taxes	420
Total	4,519

Returns to labor and management	
Farm receipts	$ 7,024
Farm expenses	4,519
Labor earnings	2,505
Capital	
Real estate (land, buildings)	$ 5,700
Machinery	4,050
Cattle (basic herd)	7,700
Total	$17,450

[a] Includes machinery and equipment, insurance on tractor, and fencing.

The common practice is to market the heifers and steers off grass in the fall as long yearlings. When cows are sold they are also marketed off grass in the fall.

Size of Business.—This farm should have about 1,200 acres of meadow land and a herd of beef cattle with 70 cows.

Receipts and Expenses.—Receipts amount to $991 from the sale of cows, $3,645 from steers, and $2,388 from the sale of heifers. All receipts are from the sale of cattle.

Expenses directly related to the cattle enterprise are the most important item and amount to $1,987, or 44 per cent of total farm expenses. Haying costs are next in importance and amount to 23 per cent of the total. Interest on capital investment amounts to only six per cent.

Labor Earnings.—Total receipts from sales of cattle amount to $7,024 and total farm operating expenses to $4,519. Returns to the operator for labor and management contributed to the farm business total about $2,500.

Capital.—Capital requirements amount to $17,450. Of this total, investment in cattle (basic herd) makes up about 44 per cent, real estate (land and buildings) 33 per cent, and machinery and equipment 23 per cent.

Adjustment Trends

The farmers of Manitoba, except for some specialty farmers, receive the bulk of their income from sales of grain and beef cattle. An increase in farm income, for most farmers, must therefore come from an increase in the production of these products. The farmer producing grain must increase his crop acreages if he wishes an increase in income; the farmer producing beef cattle must enlarge his herd and also his acreages of pasture, hay and/or cropland. The results of this study suggest that there is a marked difference between the type of farm organization needed to give the farmer a desirable level of living and the type now prevailing on most farms in Manitoba.

Up to only a few years ago farmers in most parts of the province could increase their improved acreage by breaking new land. In most districts land for breaking is now scarce and an increase in farm size must come from the consolidation of present farm units. If the size of business on most farms is to increase to a desirable level a major reorganization and consolidation of farm units becomes necessary. Data for rural municipalities representative of the major agricultural areas of the province will indicate the extent of the changes necessary.

The total area of improved land in Manitoba increased by about 42 per cent between 1921 and 1956 (Table 6). This acreage was divided among an

Table 6.—Number of Farms, Improved Area and Improved Area per Farm, Manitoba, Census Years 1921-56

Census year	Number of farms	Total improved area	Improved area per farm
	number	thousand acres	acres
1921	53,252	8,058	151
1926	53,251	8,346	157
1931	54,199	9,773	180
1936	57,774	8,855	153
1941	58,024	9,829	169
1946	54,448	9,773	179
1951	52,383	10,762	205
1956	49,201	11,454	233

SOURCE: *Census of Canada*, 1921 to 1956, and *Census of the Prairie Provinces*, 1926 to 1946.

increasing number of farm units until 1941. Since then there has been a decline of about 15 per cent in the number of farms in the province. The increasing improved acreage and the decreasing number of farm units resulted in an increase in the average improved acreage per farm. During the first few years of this change in size of improved acreage per farm the increase, in most areas, came largely from the breaking of further land within the farm boundaries. In recent years some of the expansion in improved area per farm has come from the elimination of some farm units. The extent of such farm consolidation varies from district to district in the province.

Red River Valley Area.—The area of improved land in the municipalities of Morris and Macdonald increased about 32 per cent between 1921 and 1956 (Table 7). All increases actually occurred between 1926 and 1941. Since then about 20,000 acres have been periodically in and out of cultivation.

Improved acreage per farm was only 13 per cent larger in 1956 than in 1921. The largest change in farm size has taken place since 1946 with an increase of about five acres a year. Less than one-half of this increase was due to farm consolidation; the remainder came from the return to cultivation of land that had been left idle between 1941 and 1946.

Table 7.—Number of Farms, Improved Area, Improved Area Per Farm, Municipalities of Morris and Macdonald, the Red River Valley Area, Manitoba, Census Years 1921-56

Census year	Number of farms	Total improved area	Improved area per farm
		thousand acres	acres
1921	1,089	366	336
1926	1,239	364	293
1931	1,340	391	291
1936	1,464	443	303
1941	1,436	495	345
1946	1,453	475	327
1951	1,364	486	356
1956	1,264	482	381

Estimated requirements: (labor earnings, $2,500)—improved area per farm................500 acres
—number of farms........................960

Source: *Census of Canada*, 1921 to 1956, and *Census of the Prairie Provinces*, 1926 to 1946.

In 1956 about 59 per cent of the farms in these municipalities reported a total farm area of less than 400 acres[1]. The most common size of farm was the one-half section.

Farm numbers reached a peak in 1936 and no appreciable reduction was recorded until after 1946. The reduction in number of farms averaged 19 farms a year between 1946 and 1956.

A grain farm in this area should perhaps have an improved acreage of about 500 acres, an increase in size of about 30 per cent over that of the average farm in 1956. The reorganization and consolidation of farms necessary, before this increase could be achieved, would reduce farm numbers in the area by about 20 per cent. At the present rate of consolidation it will take over

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[1] Source: *Census of Canada,* 1956.

20 years for the average farm to reach this minimum desired size.

South Central Area.—The municipalities of Pembina and Lorne in south central Manitoba are representative of an area that is predominantly grain-growing but has some farms with small herds of beef cattle. Non-arable land suitable for hay and pasture is available on many farms. It is most probable that both these types of farm will persist in this area.

The total area of improved land in the two municipalities increased by almost 28 per cent between 1921 and 1956 (Table 8). Fairly large acreages of new land were brought under cultivation in all periods except 1941 to 1946.

In 1956 about 58 per cent of the farms had an area of less than 400 acres[1]. At this time the average farm had 404 acres of land of which 293 acres were improved. This was an increase in improved area per farm of 53 per cent over 1921. The greatest increase in improved area per farm took place between 1951 and 1956 when the increase averaged six acres per farm a year. Between 75 and 80 per cent of this increase came as a result of farm consolidation.

Farm numbers reached their peak in 1931 but since that time there has been a continual reduction in each census year. There were 103 farm units less in 1956 than 1951, a decrease of about eight per cent.

Table 8.—Number of Farms, Improved Area, Improved Area per Farm, Municipalities of Lorne and Pembina, South Central Manitoba, Census Years 1921-56

Census Year	Number of farms	Total improved area	Improved area per farm
		thousand acres	acres
1921	1,420	273	192
1926	1,411	296	210
1931	1,477	307	209
1936	1,459	315	216
1941	1,426	329	230
1946	1,329	325	244
1951	1,297	341	263
1956	1,194	349	293

Estimated requirements: (labor earnings, $2,500)—improved area per farm
grain farm..........480 acres
grain-beef farm..........400 acres
—number of farms..........835

Source: *Census of Canada*, 1921 to 1956, and *Census of the Prairie Provinces*, 1926 to 1946.

A grain farm in this area should perhaps have an improved area of about 480 acres, an increase of 64 per cent over the average farm of 1956. A farm producing grain and beef cattle would require 395 acres of improved land and 85 acres of native hay and pasture. This improved acreage is 37 per cent larger than that of the average farm in 1956. In addition to this increase in land acreage, the grain-beef farm requires a herd of 22 cows in contrast to the 4.4 cows on the average farm in 1956. The reorganization and consolidation of farms necessary to allow this increase in size would reduce farm numbers by about 30 per cent. In spite of the fact that considerable consolidation took place in the period between 1951 and 1956 the rate is not sufficient to allow the average farm to reach a desirable size for at least 20 years.

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[1] Source: *Census of Canada*, 1956.

Western Area.—The municipalities of Pipestone and Wallace in Western Manitoba represent an area that is generally low in productivity for grain and has a large acreage of unimproved land suitable for hay and pasture. There are innumerable bush-ringed sloughs throughout the area which hinder machinery operation and, therefore, costs of grain production are relatively high especially labor and machinery operating costs. It is most probable that a grain-beef farm will predominate in this area in the future.

Between 1921 and 1946 some land was being taken out of cultivation in these municipalities (Table 9). This land was brought back into cultivation in the rather favorable moisture period following 1946. A large amount of this land was in the area of more droughty soils in the eastern part of these municipalities, but some parcels of land were also abandoned throughout the entire area.

Table 9.—Number of Farms, Improved Area, Improved Area Per Farm, Municipalities of Pipestone and Wallace, Western Manitoba, Census Years 1921-56

Census year	Number of farms	Total improved area	Improved area per farm
		thousand acres	acres
1921	1,099	306	278
1926	988	292	296
1931	1,041	283	272
1936	1,028	273	265
1941	982	269	274
1946	970	266	274
1951	1,006	279	277
1956	950	312	328

Estimated requirements: (labor earnings, $2,500)—area per farm improved................755 acres
—unimproved hay and pasture...........370 acres
—number of farms........................412

Source: *Census of Canada*, 1921 to 1956, and *Census of the Prairie Provinces*, 1926 to 1946.

In 1956 the average farm in these municipalities had 545 acres of which 328 acres were improved [1]. In addition to land the average farm had 3.8 cows. This is much less than the 755 acres of improved land, 370 acres of unimproved hay and pasture land, and 25 beef cows considered necessary to give the farm operator a desirable level of living. Cow numbers in these two municipalities would increase by almost 300 per cent were the farms in this area to become organized according to our plans. At the same time the number of farms would decline by about 57 per cent.

Although there were fewer farms in these municipalities in 1956 than in 1921 there has not been any definite trend towards reducing farm numbers. There were no marked trends towards a decrease in the number of farms or an increase in the size of farm during the 1921-51 period. However, there was a marked increase in average farm acreage from 1951 to 1956; the largest part of this increase stemmed from the rebreaking of abandoned land. Still, one can discern little evidence of farm consolidation and sees little prospect of a future reorganization and consolidation move that would enable farmers to greatly increase their levels of living.

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[1] Source: *Census of Canada*, 1956.

Interlake Area.—Data for the municipalities of Coldwell, Eriksdale, and St. Laurent have been used to describe the complex situation of farms in the Interlake Area. Our data are restricted to these municipalities but we believe them to be applicable to other parts of the Interlake area and parts of the fringe area of agricultural settlement where there is non-arable land available in fairly large acreages that can be used for hay and pasture. We shall not refer to the large acreages in the central Interlake area and southeastern Manitoba that are covered by bush, scrub, rock outcrop, and grasses of low nutritive value or to the small areas of arable land near such places as Eriksdale, Fork River, and Ethelbert.

Census data illustrate the rather poor agricultural conditions in this area. The three municipalities of Coldwell, Eriksdale, and St. Laurent had 1,245 farms in 1921 and only 579 in 1956 (Table 10). The average farm in 1956 had 508 acres of which 52 acres were improved. Many farms have no improved land other than a garden.

Table 10. Number of Farms, Improved Area, Improved Area Per Farm, Municipalities of St. Laurent, Coldwell, and Eriksdale, Interlake Area of Manitoba, Census Years 1921-56

Census Year	Number of farms	Total improved area	Improved area per farm
		thousand acres	acres
1921	1,245	30	24
1926	826	24	29
1931	643	19	28
1936	531	19	35
1941	702	18	25
1946	629	20	32
1951	582	30	51
1956	579	30	52

Source: *Census of Canada*, 1921 to 1956, and *Census of the Prairie Provinces*, 1926 to 1946.

In the areas suitable only for hay and pasture production it has been estimated that about 1,200 acres, all of which can be utilized for these purposes, plus a beef cow herd of 70 cows are necessary to make up a farm business of desirable size. Because of the lack of information on the extent of the area suitable for hay and pasture, it is difficult to estimate the extent of the necessary reorganization and consolidation of farms. However, it would appear that the total farm acreage should be absorbed by about one-fifth of the farms now in the area. Such a reorganization may appear drastic but it would not be as difficult as in some of the more thickly populated areas of the province. In 1957 about 40 per cent of the land area in the three municipalities was owned by the Crown and the municipalities.

PUBLICATION OF THE ECONOMICS DIVISION

Canadian Agriculture in 1959—A Chronology of Federal Policies. Cameron, Marjorie R.

The eighth annual report on changes in federal policies affecting agriculture and important events related to these policies.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

In Canada: The Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal, 34.

1948-1958 Per Caput Fiber Consumption Levels. Prepared by the Agricultural Raw Materials Section of the Commodities Divisions of the Food and Agriculture Organization. Rome, 1960. pp. v. +- 183.

This statistical report is organized under the following headings: World Summary; Per Caput Fiber Consumption; and Availability for Home Use.

Monthly Bulletin of Agricultural Economies and Statistics. Vol. IX, No. 4, April 1960. Food and Agriculture Organization, Viale delle Terme di Caracalla, Rome, Italy.

This issue of the Bulletin contains an article on Computation of Errors for Sample Estimates, by S. S. Zarkovich, Commodity Notes on the Copra and Coconut Oil Situation, Wool Prices in the 'Fifties, and Quarterly Notes on Commodity Market as well as the usual Statistical Tables on Production; Trade, and Prices.

Monthly Bulletin of Agricultural Economics and Statistics.—Vol. IX, No. 5, May 1960. Food and Agriculture Organization, Viale delle Terme di Caracalla, Rome, Italy.

This issue contains an article by Alexander N. Sakoff on Current Trends in Collective Farming in the U.S.S.R. and a "Special Feature" on The Cost of Carrying Commodity Stocks, Commodity Notes and Statistical Tables on the production, trade and prices of some agricultural products.

OTHER PUBLICATIONS

Dynamic Programming and Markov Processes. Howard, Ronald A. Published jointly by The Technology Press of The Massachusetts Institute of Technology and John Wiley & Sons, Inc., New York. London. pp. viii + 136.

The first book to supply an exhaustive examination of the relation between dynamic programming and Markov processes. It explains discrete and continuous-time Markov processes and discusses the application of the policy-iteration method to processes with either discrete or continuous time dependence, and with or without discounting as an important element.

Farm Business Statistics for South East England.—Sykes, J. D. Wye College (University of London), Department of Agricultural Economics, England. 1960. pp. 77. Price: 2/6.

"The main aim of this booklet is to assist" farmers "in developing sound farming businesses by throwing light on the current profitability of various types and sizes of farms and on better methods of management".

Trends in Milk Production, 1955-59. A brief review of considerations for the milk producer in the South-West. Roscoe, Betty J. and J. A. Langley. Report No. 117. Department of Economics (Agricultural Economics) University of Bristol, Devon, England. March 1960. pp. 29. Price: 3/6.

The first two sections of this report describe the changes in numbers of registered milk producers, total milk supplies off farm, milk quality and milk prices and compare the trends in the southwestern sector of England with those for England and Wales. The last section studies returns, costs and margins for a sample of herds in southwestern England.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

A. H. TURNER, Director

DECEMBER 1960 **Vol. XXX No. 6**

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G. P. BOUCHER, Editor

Published by Authority of the Honourable Alvin Hamilton
Minister of Agriculture

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ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production[e]
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
	1935-39=100							1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	221.2	170.7	271.6	242.9	269.5	219.1	126.5	121.1	165.4
1959										
April	231.2	219.9	168.8	271.0	244.7	273.0	220.2	125.4	119.3	166.2
May	231.2	224.9	178.9	271.0	246.9	....	....	125.6	118.5	165.4
June	230.6	228.0	185.5	270.6	247.9	....	....	125.9	119.1	166.1
July	231.0	228.9	185.0	272.8	250.3	....	....	125.9	119.2	164.8
Aug.	231.0	222.0	169.1	274.9	241.7	275.2	218.8	126.4	120.5	164.2
Sept.	230.9	219.1	161.1	277.0	239.8	....	....	127.1	122.4	168.3
Oct.	230.0	215.5	163.1	267.9	236.4	....	....	128.0	124.2	171.9
Nov.	230.2	217.2	165.2	269.1	233.8			128.3	123.8	166.7
Dec.	229.7	215.0	166.9	263.1	230.7	....	....	127.9	122.4	169.5
1960										
Jan.	230.5	214.6	171.6	257.7	229.5	266.7	221.9	127.5	121.6	173.5
Feb.	230.0	212.0	172.0	252.0	226.4	....	....	127.2	120.8	170.1
Mar.	229.6	213.6	175.1	252.2	226.6	....	....	126.9	119.4	171.9
April	231.3	218.3	180.5	256.2	233.6	277.9	223.4	127.5	120.9	166.6
May	231.3	220.0	182.3	257.8	235.3			127.4	120.2	167·9
June	231.9	225.1	185.2	265.0	239.4	....	....	127.6	120.8	167.7
July	232.2	221.8	173.6	270.1	241.1	....	....	127.5	120.5	164.4
Aug.	230.2	216.2	160.6	271.7	235.2	279.6	222.9	127.9	121.7	165.4
Sept.	230.4	217.0	160.4	273.6	238.0			128.4	123.3	....
Oct.	230.3	215.5	161.7	269.4	....	....	....	129.4	125.8	....

Note:–See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes subsequent to July 1959 are subject to revision.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates. 1960 indexes are subject to revision, since tax and interest rate figures are preliminary.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

(e) For a detailed description of concepts, sources and methods see D.B.S. Reference Paper (61-502) Revised *Index of Industrial Production, 1935-57.*

THE OUTLOOK FOR CANADIAN AGRICULTURE IN 1961[1]

General Economic Outlook.—The rate of expansion has slackened in some countries and as the outlook for 1961 is rather uncertain. However, business conditions in industrial countries remain generally favorable and indicate a slight rise in world demand for agricultural products.

On the other hand world supplies of major agricultural commodities are likely to increase in 1961. The 1960-61 world wheat crop may be five per cent greater than the 1959-60 output and the principal wheat exporting countries will have record supplies of wheat. Increased production is expected for beef and veal and to lesser extent, pork. World production of milk will continue to increase.

Business activity in Canada slackened somewhat during 1960. Exports to the United States declined but exports to overseas countries increased. Personal income is being well maintained. Consequently, the present high level of personal spending is expected to continue in 1961. Capital spending will be bolstered with the expansion of work on major public utility projects now underway and the initiation of new projects; sharp increases are expected in expenditure for the development, processing and transmission of natural gas.

Cash farm income from the sale of field crop products in 1961 should be close to that of 1960. Lower prices for livestock and livestock products will probably reduce income from the sale of cattle and calves but higher income from other livestock and animal products will likely offset the decline. Although total cash income from the sale of farm products may be a little higher, it is quite possible that farm operating costs, including depreciation charges, will increase enough to offset the expected small gain in cash income.

Grains and Feeds.—Canada's wheat carry-over has declined for three successive years but the carry-over is likely to be larger on July 31, 1961 than a year earlier. The following are significant factors in a longer-term outlook:

(a) Prairie wheat plantings have averaged about 23.5 million acres during the past 30 years, and this acreage is likely to be maintained.
(b) Average yields of wheat have shown a rising trend during the last 30 years. They were 13 bushels an acre in the 1930's, 17 bushels in 1940's, and 21 bushels an acre in the 1950's. The latter average is likely to be maintained or increase over time.
(c) Domestic requirements have been fairly stable in recent years at 150-160 million bushels and are unlikely to change much during the next few years.
(d) The commercial export market for our wheat has averaged about 270 million bushels a year for the past five years. Average annual exports of nearly 300 million bushels in the last three years probably represent the maximum for the years ahead, even with the help of greatly increased special disposal programs.

Canada's carry-over stocks of wheat should thus continue to increase during the next few years unless poor yields or lower acreages curtail production, or unless new markets are found, or unless other countries reduce incentives for the production of wheat.

The total world supply of wheat for export far exceeds effective demand. This imbalance grows from year to year and has resulted in the expanded movement of wheat on concessional terms. Canada's share of the world commercial market has been well maintained, largely because of quality. In the non-commercial sphere, Colombo Plan countries will likely take about the same amount as last year. There will, however, be heavy offerings of United States wheat under special surplus disposal programs to countries with serious food deficits and foreign exchange difficulties.

---

[1] A summary of outlook statements prepared by committees made up of representatives from various departments of the government of Canada. These statements were read and discussed at a meeting of officials of the federal government and of provincial departments of agriculture. This meeting was held in Ottawa, November 7-8, 1960.

Exports of durum wheat in 1960-61 are expected to reach a total of 30 million bushels, double the normal level. This will still leave sufficient carry-over on July 31, 1961 for a normal year's exports.

The outlook for feed grains is for lower domestic disappearance during the crop year 1960-61 than in the previous year, the number of grain-consuming animal units on farms having declined by seven per cent. The amount of feed grains available per animal unit is estimated at 1.03 tons compared with an average consumption of 0.83 tons.

Difficulties experienced in exporting feed grains in recent years are likely to continue. Consequently, exports are likely to be below the relatively low level of 1959-60.

In the longer run the demand for feed grains should be sufficient to warrant some increase in acreage. Assuming average yields, there should be no serious difficulty in disposing of the product of one million more acres during the next decade.

Livestock, Meat, and Wool.—Carcass gradings of hogs in Canada in the first half of 1961 are expected to average about 130 thousand a week, six per cent below the total for the corresponding period of 1960. Hog prices will remain at or about the 1960 level throughout much of 1961. However, larger hog supplies expected in Canada next fall, coupled with the prospect of lower hog prices in the United States, will likely lead to lower hog prices in Canada in the fall of 1961 than in the fall of this year.

The rate of growth in beef-producing capacity in North America during the past decade has greatly outstripped the increase in human population. Factors that may limit further expansion in beef production are the costs of increasing forage production and especially the limitations of the market demand for beef. The build-up in cattle numbers in Canada and the U.S. is expected to continue in 1961 but at a slower rate, and a peak will likely be reached in 1962 or 1963. Marketings in both countries are expected to be larger next year than in 1960, and should continue to expand in 1962.

Marketings and slaughter of grass cattle in the U.S. will be larger this fall than in the fall of 1959 and more cattle are expected to move into U.S. feedlots. Canadian grass cattle marketings will be about the same this fall as in the fall of 1959 and fed cattle supplies will be about the same in 1961 as in the previous year. Cattle prices in Canada in 1961 will likely be slightly lower than in 1960, because of the larger beef supply. Gradually declining prices are expected in the U.S.

There are more calves on farms in both Canada and the U.S. than last year and an increase in the calf crop is expected in 1961.

Sheep and lamb numbers in Canada will continue to increase slightly in 1961, with a corresponding rise in lamb production. World production of wool is up and prices are declining because of a smaller demand; market prices for domestic raw wool in Canada are thus likely to be lower than in 1960.

Eggs and Poultry.—The egg output is likely to be lower in the first quarter of 1961 than in the first quarter of 1960. The upward trend in the rate of lay is expected to continue but the effects of this trend will be more than offset by a reduction in the size of the national flock. The volume of eggs marketed will probably be such that egg prices will again decline seasonally early in the year, but less sharply than in 1960.

For the remainder of the year prospects are less definite. The hatch this fall and in the first few months of 1961 will affect egg output. Hatchings this fall showed a rising trend.

Production of broilers will likely increase moderately, the main increases occurring in areas where the broiler industry is still a small-scale industry. Prices will be influenced by the relative prices for red meats and these are expected to remain fairly high. Higher prices for turkeys in 1960 are expected to encourage higher production in 1961. Turkey production is expected to reach an all-time high in the U.S. next year.

Dairy Products.—A small increase in milk production to a total of 18.6 billion pounds is forecast for 1961, owing to a continuation in the rising trend of average production per cow. Cow numbers are expected to remain at about the 1960 level. Utilization of milk on farms will be about the same as in 1960 but an increase of two per cent in fluid sales is expected. At least as much milk will be used in the manufacture of evaporated whole milk in 1961 as in 1960, and an increased quantity will likely be used for powdered whole milk. The remainder of the milk, about 8.8 billion pounds, will go into cheese and butter, this will suffice to produce 320 million pounds of butter and 115 million pounds of cheese. These quantities will greatly exceed domestic utilization and exports in 1960. Cheese consumption will likely increase slightly in line with population growth but butter consumption, per capita and total consumption, is expected to continue to decline in 1961. This forecast assumes no changes in government price support policy.

Domestic usage of skim milk powder sets records in a long succession of years up to 1959. Apparent domestic disappearance in 1961 will probably be at about the same rate as in the last two years. Dry milk powder prices are now competitive in export markets and are expected to remain near current levels throughout 1961.

Apples and Potatoes.—The Canadian apple crop was smaller in 1960 than in 1959 and below the average for recent years. North American supplies total 123 million bushels, or about 15 million bushels less than in 1959. On the other hand, the increase in the West German crop in 1960 is expected to exert an important influence on the overseas market for North American apples this winter. In the longer run exporters of Canadian apples may expect increased competition from United Kingdom producers in supplying apples to European markets.

Present indications suggest that the 1960-61 market for fresh apples in North America will be at least as good as in 1959-60. Prices in overseas markets are expected to be somewhat lower than last year.

Domestic disappearance of canned apple products in Canada has been showing a general long-term upward trend. Because of the smaller crop and brisk fresh apple sales this fall fewer apples will be available for processing.

The 1960 Canadian potato crop is much larger than that of 1959 and the crop in North America, as a whole, is six per cent higher. Potatoes are moving into market channels this fall in increased volume but at lower prices than the high level reached in 1959. Prospects are that the volume of exports will at least equal that of last season, with some decline in prices from last year. Consumption of potatoes in processed form has increased markedly during the last few years and the upward trend is expected to continue.

Other Farm Products.—In 1960 there has been a small movement of fresh peaches to the United Kingdom to test consumer acceptance. If this test proves successful, a specialty market will be provided for this product. There appears to be a possibility of increasing our export market for honey with the disappearance of United Kingdom exchange difficulties.

Lower prices, reflecting larger supplies, should encourage the expanded use of flaxseed and flaxseed products both in Canada and abroad. Since Canada enjoys preferential treatment in the U.K. market, expansion of our relatively small shipments to that country may reasonably be expected. In western Europe and Japan, important markets for flaxseed, Canada will face stiffer competition from the large Argentine crop but U.S. available supplies will be smaller. The long-term position of flaxseed is being affected by increasing substitution of other materials for linseed oil in paints.

The most important factor in the supply and price outlook for soybeans in Canada is the situation in the United States. Price levels in that country in 1960-61 are expected to be similar to those of the previous year. Exports of soybean oilmeal to the U.K. are likely to be smaller than in 1959-60, but larger than in preceding years. Changes in the domestic disappearance of soybean oil will depend to some extent on prices for other oils.

Canada's rapeseed crop reached a record level of 604 million pounds in 1960. With reduced crops in Sweden and France and very large supplies in Canada a record volume of exports may be attained in 1960-61. Rapeseed oil is now accepted as an edible oil in Canada. This may lead to increased domestic use.

There will be plentiful seed supplies of all the older popular varieties of cereals, oilseeds and corn and relatively good supplies of newer varieties in Canada in 1961. Export demand is strong in the U.S. for such varieties as Selkirk wheat and Rodney and Garry oats. Large quantities should move to that market.

Total production of Alfalfa seed may equal domestic requirements but pedigreed seed of newer sorts will not meet demand. Smaller crops of alsike clover in the U.S. and Europe should help export demand, despite the declining popularity of this crop. Red clover seed of double-cut varieties will fall short of domestic needs but single-cut varieties will be in surplus and may have to find a market in Europe, which has absorbed the excess in recent years. Supplies of commercial grass seeds except Kentucky blue grass, are in excess of domestic needs. Low prices may stimulate sales abroad.

Canada had a record crop of about 190 million pounds of flue-cured tobacco in 1960. However, stocks of old leaf flue-cured tobacco at the year-end will probably represent only on 11.6 months' supply, a level normally considered low. As demand for flue-cured tobacco, both domestic and export, has been increasing, it is expected that old leaf stocks will again be slightly smaller than a year's supply on December 31, 1961. The outlook for other types of tobacco is not quite so encouraging. New tobacco production areas are being tested in Eastern Ontario and the Maritime Provinces.

CORRIGENDA

In paragraph (a) of the subsection on "How the Act Operates," in D. W. Ware's article on "Crop and Livestock Insurance in Canada," page 108 of the October 1960 issue of The Economic Annalist, please replace "the award is two dollars an acre" by "the award is ten cents an acre."

In Table 10, page 119 of the October 1960 issue, the number of farms in 1931 should read "684" instead of "643."

THE 1960 INTERNATIONAL LABOUR CONFERENCE AND RURAL PROBLEMS

M. E. Andal [1]

"Rural problems" was one of the items considered by the forty-fourth session of the International Labour Conference in Geneva in June of this year. More specifically, this item was called: Contribution of the I.L.O. to the Raising of Incomes and Living Conditions in Rural Communities, with Particular Reference to Countries in Process of Development. The discussion of this question was of great interest to representatives of all countries attending the Conference.

For the sake of our readers who may be unfamiliar with the work of the I.L.O. we have chosen to preface our comments on the 1960 session with a brief review of the organizational structure and activities of that international agency.

The I.L.O. was established in 1919 under the terms of the Treaty of Versailles, at the same time but separate from the League of Nations. After the League's demise at the beginning of World War II the I.L.O. continued and in 1946 became one of the specialized agencies of the United Nations. Its broad purpose is to promote social justice and peace through improvements in working conditions and living standards in all countries. It deals with international labor and social problems such as the Food and Agriculture Organization, another United Nations' specialized agency, handles questions relating to food and agriculture and the World Health Organization works to improve health. Eighty-three countries are now members of the I.L.O. Canada has been a member continuously since the beginning.

The I.L.O.'s structure is unique among international agencies in that worker, employer and government representatives share in making decisions and shaping policies. This tripartite structure gives I.L.O. the benefit of varying points of view and is credited with giving it much of its strength.

Its permanent headquarters are in Geneva, Switzerland. During World War II they were temporarily transferred to Montreal, Canada.

The machinery of the Organization consists of: (1) **the International Labour Conference**, which is the senior body of the organization. The Conference usually meets each year in Geneva. There are four delegates from each country plus a number of advisers for the separate items on the agenda. Two of the delegates are from the government, one is an employer delegate and another a worker delegate; (2) **the Governing Body** which is the "executive council" of the Organization and consists of 20 government, 10 employer and 10 worker delegates. As one of the ten countries of "chief industrial importance" Canada has a permanent government seat on the Governing Body; and (3) **the International Labour Office**, which functions as a secretariat and operational headquarters and as an information and research center.

The I.L.O. works in a variety of ways to accomplish its objectives. Its technical assistance program at present involves some 200 technical assistance experts working in more than 40 countries. It has awarded many fellowships and study grants to individuals from underdeveloped countries. Staff specialists at headquarters conduct research on many subjects such as social implications of automation and labor-management relations. Labor standards have been adopted on a wide variety of subjects such as forced labor, hours of work, safety and health, minimum age for employment, collective bargaining and social security. Industrial and other committees have been established to further the work of I.L.O. One of these is the Permanent Agricultural Committee [1]. The I.L.O. publishes many studies, periodicals and pamphlets.

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[1] Adviser to Canadian Government Delegation.

On the question of rural problems, the I.L.O. prepared and distributed to member countries last spring a report which served as the basis of discussion at the Conference.

This comprehensive document is titled "Report VI, Contribution of the I.L.O. to the Raising of Incomes and Living Conditions in Rural Communities, with Particular Reference to Countries in Process of Development". It is dated 1959 and is issued by the International Labour Office, Geneva. It was particularly helpful in providing background information on rural characteristics and problems in developing countries.

Some Characteristics of Less Developed Countries.—The agricultural conditions of less developed countries vary widely. However, there are some general characteristics common to each:

(1) **Underemployment of the agricultural labor force**—Farming provides full-time work for rather short periods. This condition stems from the existence of very small farms, the rigid pattern of production, the seasonality of farming, outdated systems of land tenure, the lack of incentives and the shortage of capital. Much of the rest of the time is spent in idleness or in search of work elsewhere. Migratory movements of labor go far beyond the amount required for a normal shift to non-agricultural sectors and for seasonal migration to meet farm labor shortages elsewhere. There is therefore a continual unorganized and haphazard drifting of labor back and forth between city and country.

(2) **Low productivity**—Enormous differences exist in agricultural efficiency in different parts of the world. Measurement of relative efficiency is a difficult matter but the FAO has estimated that production per head in some developed countries is 10 to 20 times that in Latin America and Asia. In an extreme case, agricultural labor efficiency in New Zealand was estimated to be 50 times higher than in some parts of India. Most underdeveloped countries also have a very low output per unit of land area compared with developed countries. Farmers rely on outdated farming techniques and have a low level of technical education. Cultivation is frequently done by hand with primitive tools or with wooden plows pulled by workers or by oxen. Excessive soil erosion results from plowing up and down slopes. Fertilization practices, rotations and the use of improved seeds are largely unknown, and methods of harvesting and storing agricultural products are also primitive and wasteful. Lack of research, training and extension facilities and the low level of technical knowledge of large masses of people, as well as the shortage of capital contribute to the survival of such primitive methods.

(3) **Low levels of income and of living.**—Wage levels are much lower for agricultural than for industrial workers and the low-wage situation in agriculture is further worsened by the seasonal fluctuations in agricultural employment. The diets of many people do not provide enough calories for productive effort and supply too little of the protective foods which are important for resistance to diseases and parasitic infection. The lack of elementary education and the prevalence of illiteracy are at the root of many of the problems of agricultural workers.

Problems of rural youth were discussed by Dr. George V. Haythorne, Head of the Canadian Delegation, when speaking at the Plenary Session on the Report of the Director General. He said that "In rural areas, however, there are some more difficult problems facing youth in low-income families. Isolated as they often are, people in these low-income rural areas may have little or no interest in moving to other locations or in improving their situation where they are. This is not surprising when most of their efforts have to go into providing a bare minimum of food, shelter and clothing". As an approach to this problem Dr. Haythorne suggested that "additional careful and extensive studies are needed, followed by the development of practical measures to assist such people to raise their standard of living to the point at which they might be expected to become actively interested in improving conditions where they are or in moving elsewhere... Until ways are found of getting people to do something about improving their lot, there are severe limits on what can be achieved for them or for their children through the provision of services in the labor, education, health or any other field". He went on to say that one such measure introduced in Canada was the system of family allowances.

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[1] Canadians who have served on this Committee include Mr. S. J. Chagnon who is at present on the Committee. Dr. J. F. Booth and Mr. Arthur Stewart served earlier.

The I.L.O. report describes other barriers to agricultural progress. Among these are excessive concentration of ownership, fragmented farms, lack of incentive for tenant cultivators to apply improved farming practices, and lack of credit facilities and institutions to meet the capital needs of small farmers. Social and human relationships often act as strong impediments to agricultural development. The stress on traditional methods, the isolation and stagnation of rural communities, the sanctions and taboos, all tend to restrict economic and social development. Advancement will therefore require changes in the attitudes and outlook of rural communities.

A long-term program considered.—The Conference considered that there was a place for a contribution by the I.L.O. to the raising of incomes and living conditions in rural communities and, accordingly, recommended the consideration of a long-term program of research and technical assistance.

The suggested research program included studies of:

1) Employment promotion in rural areas, including possibilities of supplementary or alternative employment in non-agricultural occupations.

2) Local capital-building projects and other schemes to provide voluntary gainful occupation to unemployed and underemployed labor.

3) Co-operatives or analogous organizations for production, supply, marketing and services in agriculture.

4) Causes and characteristics of migratory movements of rural workers.

5) Social protection for rural workers.

6) Life and work conditions of workers.

7) Special problems relating to the integration of indigenous, tribal and semi-tribal populations.

8) Production and marketing problems of small-scale industries. These studies are especially designed to disseminate knowledge of capital-saving techniques and of means of increasing efficiency on production.

9) Social effects of technological change.

10) Occupational health and safety.

11) The effects of agrarian structure, changes and reforms on employment and on conditions of work.

Technical assistance through expert advice, fellowships, seminars and pilot projects was suggested for such subjects as:

1) Surveys to determine manpower resources and the extent of underemployment and unemployment.

2) Vocational guidance and training for agriculture, fisheries, forestry and small-scale industries, including training of agricultural workers for non-agricultural employment.

3) Organization of co-operatives, particularly those servicing agriculture, small-scale industries and the rural community in general.

4) Modernization of rural industries.
5) Conditions of life and work.
6) Extension of social security to rural populations.

National Action.—The Conference considered that the kind of program recommended required complementary policies and action by national governments of countries requesting assistance. Since several international agencies are concerned with certain aspects of the broad field of rural development, national governments should establish a co-ordinating authority so that international assistance drawn from various sources might fit into a concerted national program. National governments should survey and analyze the facts essential to the development of effective rural development programs. They should improve techniques of production, particularly by vocational training. Increased opportunities should be provided for productive employment in agriculture and supplementary or alternative employment should be encouraged through the development of small-scale industries and, where appropriate, through a wider movement of industries to rural areas. National governments should provide for and assist, if necessary, the voluntary migration of rural people to new agricultural land or to towns. A sound structure for the development of rural areas should be encouraged by planning the necessary measures for land tenure reform, development of co-operatives, provision of credit, development of local government and community and occupational organizations. National governments should also provide social protection for rural workers.

Other Aspects.—The Conference considered that national rural development plans required increased international technical assistance and co-operation. Special emphasis should be given to what the various countries engaged in rural development can learn from each other with respect to new techniques and forms of organization as well as from the experience of countries where rural populations enjoy fairly high living and income levels.

It was considered important, too, that in planning and carrying out the suggested program the I.L.O. would consult and co-operate with the F.A.O. and other organizations of the U.N. as well as with other agencies concerned with various aspects of rural development, as appropriate.

Many representatives of governments, employers and workers spoke in favor of the resolution. In all cases the program recommended was enthusiastically supported as one which would make a significant and worthwhile contribution to the raising of income and living levels in less developed countries. There were 187 votes for the resolutions, none against and no abstentions. The proposed program will be examined further at the next meeting of the Governing Body in November 1960, and steps will be considered at that time for its implementation.

CHANGES IN COSTS AND INVESTMENT IN MACHINERY ON DAIRY FARMS IN EASTERN ONTARIO

Frank Lawrence

Dairy farmers interested in speeding up their operations should pause and consider the past effects of mechanization on costs and income. Mechanization, indeed, has become and remains an important element of costs on dairy farms.

This article, based on data from a sample of 100 dairy farms, takes a look into the effects of increased mechanization on income. These farms, first visited in 1948 and then again in 1957 all depended on dairying for the greater part of their income. They were family-operated, and most of them by the same farmers in 1957 as in 1948. They were located in the nine most easterly counties of Eastern Ontario, a region noted for its large number of dairy farms.

These farms were grouped according to the principal market outlet for their milk; 72 in the factory milk and 28 in the fresh milk farm group. The factory milk farms could choose between three market outlets but were all outside the fresh milk market. They could ship whole milk to processing plants or cheese factories or send farm-separated cream to creameries and butter factories. The fresh milk farms sold most of their milk under "quota", at a premium price, to the fluid milk trade.

The total capital investment averaged about $22,000 per farm or 12 per cent more in 1957 than in 1948 on the factory milk farms and $38,000 or about 46 per cent more on the fresh milk farms. Investment in machinery and equipment increased more rapidly, by about $700, to an average of about $3,600 per farm on factory milk farms and by $2,400 to $6,600 on fresh milk farms. There was little variation in machinery as a proportion of total capital investment between the two years and between the two groups of farms, this proportion being about 16 per cent on factory milk farms and 17 per cent on fresh milk farms.

On factory milk farms, the units of productive livestock increased from an average of about 30 per farm in 1948 to about 33 in 1957 (the average number of milk cows from about 17 to 20) and the number of acres in cropland and pasture from 150 to 174. On fresh milk farms, the average number of units of productive livestock rose from 35 to 45, the milk herd from 23 to 30 cows and the cropland and pasture acreage from 188 to 245 acres.

Labor input averaged 5,062 man-hours of work per factory milk farm in 1957, or 866 man-hours fewer than in 1948, and 6,493 man-hours per fresh milk farm, or 19 hours more than in 1948.

Gross production returns—sales of farm products, value of products used by the farm household and changes in livestock and feed inventories—averaged about $5,624 in 1948 and $6,304 in 1957 per factory milk farm and $8,747 in 1948 and $12,312 in 1957 per fresh milk farm.

Average family farm earnings rose from $2,064 in 1948 to $2,277 in 1957 on factory milk farms and from $3,412 in 1948 to $4,657 on fresh milk farms. This income includes the interest on farm investment and wages to the operator and his family for an average of 4,723 man-hours of work in 1948 and 4,377 hours in 1957 per factory milk farm, and 4,342 man-hours of work in 1948 and 4,377 in 1957 on fresh milk farms (Table 1).

Transition to Use of Power Machinery.—The increased use of power machinery is perhaps the most striking change in the organization of these dairy farms. From 1948 to 1957, the number of tractors and trucks rose 73 per cent on factory milk farms, and the number of tractors by 65 per cent and trucks by 45 per cent on the fresh milk farms. The number of other machines such as balers and combines also increased considerably.

In 1957 only one out of ten factory milk farms had no tractor and every fifth farm was equipped with more than one tractor. Tractors were used on all fresh milk farms in both years and in 1957 there were two or three tractors on almost every second farm. The number of horses had declined by 50 per cent but horses were still used extensively on 85 per cent of the farms.

Milking machines were in general use on fresh milk farms in either year but not so on factory milk farms. However, hand milking decreased by about 50 per cent on factory milk farms: it was the practice on one farm in three in 1948 as compared with only one farm in six in 1957 (Table 2).

The inventory of power machinery does not, by itself, tell the whole story. Increases in power equipment were accompanied by sharp increases in the volume of hired custom trucking and custom machine work.

Table 1.—Farm Business Summary, Two Types of Dairy Farms, Eastern Ontario, Years Ending May 31, 1948 and 1957

	72 factory milk farms			28 fresh milk farms		
	1948	1957	Percentage change	1948	1957	Percentage change
A. Livestock per farm:						
1. Total productive units	29.5	32.5	+10.2	35.0	45.0	+28.6
2. Number of milking cows	16.6	19.5	+17.5	22.7	29.8	+31.3
B. Land per farm:						
1. Acres operated	182	208	+14.3	222	289	+30.2
2. Crop and pasture acres	150	174	+16.0	188	245	+35.6
C. Labor input per farm:						
1. Man-months of work	22.8	20.1	−11.8	24.9	26.7	+11.2
2. Man-hours of work	5,928	5,062	−14.6	6,474	6,493	+ 0.3
3. Unpaid hours of work	4,723	4,377	− 7.3	4,342	4,377	− 1.8
D. Labor hours per productive livestock unit	201	156	−22.5	185	144	−22.0
E. Capital per farm:						
1. Total investment (dollars)	18,032	20,120	+11.6	25,811	37,743	+46.2
2. Investment in machinery	2,909	3,608	+24.0	4,195	6,603	+57.4
F. Average farm business results (dollars)						
1. Gross production returns	5,624	6,304	+12.0	8,747	12,312	+40.8
2. Costs of production (loss capital and unpaid labor charges)	3,799	4,363	+14.8	5,612	8,134	+44.9
3. Family farm earnings (return to unpaid labor and capital)	2,064	2,277	+10.3	3,412	4,657	+36.4

Table 2.—Changes in Power Machinery on Two Types of Dairy Farms, Eastern Ontario, Years Ending May 31, 1948 and 1957

	72 factory milk farms			28 fresh milk farms		
	1948 number	1957	Rate of change	1948 number	1957	Rate of change
			per cent			per cent
A. Machinery on farms:						
Cars	64	62	− 3	24	25	+ 4
Trucks	15	26	+ 73	11	16	+ 45
Tractors	45	78	+ 73	23	38	+ 65
Balers	2	17	+750	1	18	+1,700
Forage-ensilage cutters	9	20	+122	4	11	+ 175
Combines	2	10	+400	1	7	+ 600
B. Machines per 100 farms:						
Cars	89	86	—	86	89	—
Trucks	63	108	—	39	57	—
Cars and trucks	13	25	—	11	46	—
Trucks only	6	11	—	4	11	—
Tractors	60	89	—	75	100	—
More than one tractor	3	18	—	14	46	—
Balers	3	24	—	4	64	—
Forage-ensilage cutters	13	28	—	14	39	—
Combines	3	14	—	4	25	—
Milking machines	67	83	—	100	100	—
Bulk milk tank	0	0	—	0	3.6	—
Gutter cleaner	0	1.4	—	0	3.6	—

Table 2 gives a more detailed description of changes in power equipment.

Methods of Appraisal.—Our evaluation of the value of farm machinery and equipment is based on information obtained from the farm operators. To give its due account to obsolescence enumerators asked farmers to give the market or trade-in value of their machinery. One should note here that value estimates which take a proper account of obsolescence are likely to differ from so-called residual values or estimates of future usefulness.

Machines were grouped into two classes, power machines and other implements and equipment. Power machines included power vehicles and attachments and other motors. Depreciation was calculated by subtracting the current market value from the purchase price and dividing the result by the number of years since purchase. Other equipment included horse-drawn and minor items. Much of this equipment was old and obsolescent; depreciation was calculated at the rate of 10 per cent on present market value.

Mechanization influences the organization of a farm and work conditions on that farm. To assess the growth of investment in machinery and estimate the annual costs of that machinery one must therefore consider growth and costs in relation to the number of livestock units, available labor, and depreciation in the value of the dollar. Current dollar values for 1948 were thus converted to constant dollar values, with 1957 as a base period[1].

Purchases of new and used machinery and equipment, in 1957, averaged $465 per factory milk farm and $1,268 per fresh milk farm. In constant dollar values these outlays were not higher than in 1948 on factory milk farms but were 120 per cent higher on fresh milk farms.

Outlays on machinery, as a proportion of current investment in machinery and of annual capital expenditures rose from 1948 to 1957. On factory milk farms these outlays equaled slightly less than 19 per cent in 1948 and about 29 per cent in 1957 of the investment in machinery; corresponding figures for fresh milk farms were 10 and 19 per cent respectively.

These outlays rose from 33 per cent of the value of capital expenditures in 1948 to 46 per cent in 1957, on factory milk farms, and from 30 per cent in 1948 to 52 per cent in 1957 on fresh milk farms (Table 3).

In constant dollar values, the total investment in machinery declined eight per cent per factory milk farm, on the average, but increased 26 per cent per factory milk farm. Changes in the number of livestock units, however, led to a drop of 16 per cent in the money invested in machinery, per unit of productive livestock, on factory milk farms, and a rise of nine per cent on fresh milk farms.

The investment in machinery, in constant dollar values, per 100 man-hours of labor, rose from $66 in 1948 to $71 in 1957 on factory milk farms and from $88 to $102 on fresh milk farms. On the other hand, the number of man-hours per $100 invested in machinery declined from 15.1 to 14.0 on factory milk farms and from 11.4 to 9.8 on fresh milk farms.

Annual Costs of Machinery.—Outlays on machines, in 1957, averaged $1,514 per factory milk farm and $2,725 per fresh milk farm. These totals include depreciation and operational cash costs of machinery as well as costs of hired transportation and custom machine services but exclude interest on machinery investment (Table 4).

On both groups of farms and in both years, depreciation represented about 55 per cent of the operational and purchase costs of machinery. Depreciation in relation to investment in machinery increased sharply from 13 per cent for both groups of farms in 1948 to about 19 per cent for factory milk farms and 17 per cent for fresh milk farms in 1957.

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[1] Based on D.B.S. average monthly data for the period June 1 to May 31, in 1947-48 and in 1956-57.

In 1957, costs of machinery per farm exceeded, in constant dollar values, the corresponding costs for 1948 by 34 per cent or $386 per factory milk farm, on the average, and by 59 per cent or $1,011 per fresh milk farm (Table 4).

Mechanization costs other than interest on investment rose, in constant dollar values, only 22 per cent per unit of productive livestock from $38.23 to $46.58 on factory milk farms, and about only 24 per cent from $49.00 to $60.50 per unit on fresh milk farms.

In 1948, these costs made up 24 per cent of production costs other than interest and unpaid labor charges on factory milk farms and 22 per cent on fresh milk farms. In 1957 they rose to 35 and 34 per cent, respectively.

Machinery costs, per 100 hours of farm labor, rose from $190 in 1948 to $233 in 1957 on factory milk farms and from $339 to $420 on fresh milk farms. On the other hand, man-hours of labor per $100 of machinery costs declined from 52.5 in 1948 to 42.8 in 1957 on factory milk farms and from 29.5 to 23.8 on fresh milk farms.

Annual Costs of Motor Transportation.—In 1957, most of the 100 dairy farmers visited in Eastern Ontario used a car for their farm business but some also used a car as well as a truck. Factory milk farmers normally drove a five-year old car worth about $1,100 and covered about 4,300 miles on farm business. Fresh milk farmers used a three-year old model valued at $1,400; they drove 5,900 miles for the farm business (Table 5).

Motor trucks, in 1957, numbered nearly twice as many as in 1948 on factory milk farms and half as many more on fresh milk farms. Many of these trucks were fairly small and valued, on the average, at a little more than $600 per truck. They saved the farm-family car many hard knocks; on 11 per cent of the farms they even replaced it. Mileage driven on farm business averaged around 5,000 miles per truck, or 1,200 miles per factory milk farm and 2,100 miles per fresh milk farm.

Table 3.—Average Purchases of and Investment in Machinery, Two Types of Dairy Farms, Eastern Ontario, Years Ending May 31, 1948 and 1957

	72 factory milk farms			28 fresh milk farms		
	1948	1957	Rate of change	1948	1957	Rate of change
	— dollars —		per cent	— dollars —		per cent
A. Machinery purchases per farm:						
1. In current dollar values	345	465	+34.8	427	1,268	+197.0
2. In constant dollar values	466	465	0.0	577	1,268	+119.8
	— per cent —			— per cent —		
B. Purchases as a percentage of:						
1. Capital expenditures	33.4	46.2	+38.3	29.9	52.4	+75.3
2. Machinery investment	18.6	28.9	+55.4	10.2	19.2	+88.2
	— dollars —		per cent	— dollars —		per cent
C. Machinery investment:						
1. Per farm, current values	2,909	3,608	+24.0	4,195	6,603	+57.4
constant values	3,931	3,608	− 8.2	5,668	6,603	+26.0
2. Per productive livestock unit, in constant dollar values	133	111	−15.9	162	147	+ 9.3
3. Per 100 man-hours, in constant dollar values	66	71	+ 7.4	88	102	+16.2
	— hours of work —		per cent	— hours of work —		per cent
4. Man-hours per $100 invested in machinery, in constant dollar value	15.1	14	− 7.2	11.4	9.8	−14.0

The combined mileage for cars and trucks driven for the farm business averaged about 5,600 miles per farm, or 172 miles per unit of productive livestock on factory milk farms and about 8,000 miles per farm, or 178 miles per unit of productive livestock on fresh milk farms. These farms also depended on commercial "pick-up" and delivery services for additional transportation.

Average operating and depreciation costs (farm share) of cars and trucks totaled $357 per factory milk farm and $520 per fresh milk farm. These costs, however, represented only about 63 per cent of the total outlay on transportation per farm on factory milk farms and 45 per cent on fresh milk farms. Cash outlays on hired haulage boosted up the total costs of transportation to $568 per factory milk farm and $1,161 per fresh milk farm. These costs varied from $17.48 to $25.80, respectively, per unit of productive livestock.

The combined annual costs (less interest) of cars and trucks (farm share) together with hired haulage, in 1957, represented 37.5 per cent of total costs of mechanization on factory milk farms and 42.5 per cent on fresh milk farms. They comprised 13 per cent of farm production costs on factory milk farms and 14.3 per cent on fresh milk farms. They also equaled nine per cent of gross returns and 25 per cent of farm earnings on factory milk farms, and 9.5 per cent of gross returns and 24.9 per cent of farm earnings on fresh milk farms.

Table 4.—Annual Costs of Machinery and Equipment, Two Types of Dairy Farms, Eastern Ontario, Years Ending May 31, 1948 and 1957

	72 factory milk farms			28 fresh milk farms		
	1948	1957	Rate of change	1948	1957	Rate of change
	— dollars —		per cent	— dollars —		per cent
A. Machinery costs per farm:						
1. Depreciation	380	681	—	547	1,141	—
2. Operational cash	309	548	—	440	947	—
Subtotal, machinery	689	1,229	—	987	2,088	—
3. Hired machinery services	146	285	—	281	637	—
Total: a) in current dollar values	835	1,514	—	1,268	2,725	—
b) in constant dollar values	1,128	1,514	+34.2	1,714	2,725	+58.9
c) increase in costs	—	386	—	—	1,011	—
			— per cent —			
B. Depreciation as a rate of:						
1. Machinery investment	13.1	19.3	+47.3	13.0	17.3	+33.0
2. Annual costs of machinery	55.1	55.4	+ 0.5	55.4	54.6	− 1.4
	— years —			— years —		
3. Years required for machinery to reach junk value	7.6	5.2	−31.6	7.7	5.8	−24.7
	constant dollars		per cent	constant dollars		per cent
C. Mechanization costs:						
1. Per productive livestock unit	38.23	46.58	+21.8	48.97	60.51	+23.6
2. Per dollar of production costs	0.24	0.35	+44.0	0.22	0.34	+51.5
3. Per dollar of gross return	0.15	0.22	+48.6	0.15	0.23	+55.2
4. Per 100 man-hours	190.30	233.90	+22.9	338.60	419.60	+23.9
	—man-hours —		per cent	—man-hours —		per cent
5. Man-hours per $100 costs of machinery	52.5	42.8	−18.4	29.5	23.8	−19.3

Table 5.—Average Annual Costs of Motor Transportation, Two Types of Dairy Farms, Eastern Ontario, Year Ending May 31, 1957

	72 factory milk farms		28 fresh milk farms	
	Car	Truck	Car	Truck
A. Cost factors in operation of vehicles:				
1. Average market value (dollars)	1,057	606	1,434	638
2. Mileage driven on farm business (miles)	4,331	1,263	5,890	2,107
3. Miles per gallon of gasoline	19.8	16.9	20.8	15.5
4. Cash costs and depreciation per mile (cents)	6.2	6.9	6.0	7.9
	— dollars —		— dollars —	
B. Annual costs (farm share) per farm:				
1. Cash, operating and maintenance[a]	191	58	225	130
2. Depreciation[b]	78	30	129	36
Subtotal, farm operated	269	88	354	166
3. Hired haulage expenses	—	211	—	641
Total, farm and hired transportation	269	299	354	807
C. Summary: Farm car and truck costs	357		520	
Farm and hired costs	568		1,161	
D. Transportation costs per productive livestock unit	17.48		25.80	
E. Transportation costs as a percentage of:	— per cent —		— per cent —	
1. Total costs of machinery per farm	37.5		42.5	
2. Total costs of farm production	13.0		14.3	
3. Gross production returns	8.0		9.5	
4. Farm earnings	25.0		24.9	
5. Farm transport as a percentage of total transport	62.5		44.8	

[a] Covers variable and fixed cash costs.
[b] Purchase price less trade-in value divided by number of years used.

Gains from Mechanization.—The mechanization of the 100 dairy farms helped speed up farm work and reduce the number of hours of tedious and hard work. It also reduced the cost of paid labor and costs for the upkeep of horses.

On the other hand, greater returns could be secured from custom machine work and off-farm work and the handling of more units of productive livestock. One would be tempted to look at the net gains or losses of a farm business as an indicator of the economic benefits of mechanization. He does, however, refrain from doing this, knowing that changes in the economic conditions of farms also depend on many other efficiency factors, on the productivity of other farm resources, the scale and combination of the various enterprises, changes in cost and return conditions, and market trends.

SOME FACTORS ASSOCIATED WITH VARIATIONS IN FLUID MILK CONSUMPTION

Summary of Research Findings

R. J. McFarlane

A large amount of research has been done in the general area of fluid milk consumption and consumer preferences for and attitudes towards milk. Canadian economists are generally aware of the abundance of American literature on these topics and with the results of research in Great Britain and Canada.

This article is designed to summarize the findings of some of the studies done in these countries, with the hope that our outline may supply background information and probably serve as a guide to people concerned with programs of research in milk consumption in Canada.

For the sake of clarity and orderliness our review will center around such factors affecting the consumption of fluid milk as income, price of milk, size of family, age, sex, education, availability and service, place of residence, race, and other factors such as consumer preferences and habits.

Income.—Many studies mentioned consumer income as being one of if not the most important factor affecting the consumption of fluid milk. Hopper (1), in a review of some of the research work done in Canada before 1940, concluded that income was the most important factor. He supported his conclusion with data indicating a range in consumption of .54-.95 pints per capita per day between families on relief and those with incomes of $4,000 or more. Purcell (2) and Oatego and Alexander (3), in consumer interview studies conducted in southern areas of the United States, found that consumption increased significantly with an increase in income but that the rate of increase tended to decline once income reached higher levels. Empson (4), in a study of variations in per capita consumption of milk between towns in Great Britain, found that incomes had increased and that variations in consumption had narrowed since World War II. In prewar years variations in income between towns accounted for one-half to two-thirds of the variations in milk consumption whereas in more recent postwar years only a minor portion of the variation in consumption could be attributed to income.

Brinegar (5), developed the following short and long run income elasticities of demand for milk in a study of the "Effect of Changes in Income and Price on Milk Consumption" in a single community in Eastern Connecticut:

1) A 12-month income elasticity of demand of about +.24.
2) A short run (four weeks before and after an income change) income elasticity of more than +1.0.
3) A short run (5-month, half before and half after the major income decrease) income elasticity of about +.46.
4) A short run (8-month, one fourth before and three quarters after the major income decrease) income elasticity of about +.20.
5) A short run (for 2-month period starting one month after the major decrease in income) income elasticity of about —8.0.

In assessing these findings Brinegar suggested "that expenditure items in the consumer budget such as fluid milk which were immediately adjustable following an income change were in the short run subjected to greater variations in purchases by the household than in the long run".

Although these studies all tend to support the importance of income as a factor influencing consumption one should not assume that high income and high consumption or even adequate consumption are synonymous. Gibson and Hoffer (6), in an analysis of milk consumption rates for a small sample of 101 households in Lansing, Michigan found that families with high education and low income were more likely to consume adequate amounts of milk than were families with other combinations of high or low education and income. Rockwell (7), in a study of the effects of income and size of household on food consumption in the U.S. suggested that fluid milk consumption might be more closely related to the nutritional needs of children than to income.

Price of Milk.—The price of fluid milk obviously affects the rate of its consumption. Many studies support this view. Here, we shall content ourselves with a review of only a few of these studies.

In a study of the "Effect of Income, Fluid Milk Prices and Race on Consumption of Fluid Milk and Fluid Milk Substitutes in the Urban South", Purcell (2), found a negative relationship between price and consumption. An analysis of prices between the cities included in the study suggested a price elasticity of demand in the range of —2 to —3. Purcell also discovered a highly significant relationship between the consumption of fluid milk substitutes[a] and fluid milk prices and reported a cross price elasticity of demand for milk substitutes of 1.46. Oatego and Alexander (3) found that per capita consumption of fluid milk decreased by half a quart a week for each increase of one cent in the retail price per quart. Brinegar (5) in studying price change and milk consumption in the short run, developed the following estimates of consumer response by analyzing changes in purchases four weeks before and four weeks after a change in price.

Price change		Per cent	Per cent change in consumption	Price elasticity of demand
Date	Amount			
	- cents -			
(1) April 1, 1948	+ 1.0	+ 4.8	− 3.5	− .73
(2) Sept. 16, 1948	+ 1.5	+ 6.8	− 2.6	− .38
(3) March 1, 1949	− 1.4	− 4.3	+ 1.4	− .32

Reasons for the variation in response were not apparent. However, Brinegar suggests that individual household response to a change in the price of milk is either zero or relatively high. He found support for his statement in the following findings:

1) During the period of the first price change 89 per cent of the households did not alter their purchases but the remaining 11 per cent decreased purchases by 25 per cent.

2) During the second period eight per cent of the households decreased their purchases by 36 per cent and the remainder did not make any change.

3) During the third period only seven per cent increased their purchases but the increase averaged 26 per cent.

Dwoskin, Bayton and Hoofnagle (8) present findings from a study conducted in Memphis, Tennessee, which indicate a long run (2-year) price elasticity of demand of .75 for milk. During the period studied (Oct. 1950-Sept. 1952) the retail price of milk increased 20 per cent (4 cents/qt.) and fluid milk sales declined 15 per cent.

In recent years many studies were undertaken in the United States to determine the effect of the Special Milk Program[b] on the consumption of milk in schools. In a recent study Anderson and Hoofnagle (9) reported that children in grades 5-9, from a sample of 50 Northeastern U.S. schools which participated in the Special Milk Program, consumed seven per cent more milk in a representative 24-hour period than did students of a like number of schools which had a milk service but did not participate in the Special Milk Program. Both groups consumed about equal amounts at home but those from Special Milk Program schools drank about one-third more at school than did those from non-participating schools. The low price of milk, 3.9 cents per half pint in participating schools compared with 7.6 cents per half pint in non-participating schools, was considered to have stimulated the demand for milk in the Special Milk Program schools.

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[a] See footnotes, page 141.
[b] See footnotes, page 141.

Size of Family.—Many researchers have reported on the influence of the size of family on household consumption of fluid milk. The findings of Purcell (2), Oatego and Alexander (3) and Rockwell (7) support the general view that household consumption of fluid milk does increase as the size of the family increases. Oatego and Alexander (3), however, found that the increase in consumption was not proportionate to the increase in size of family. In the city of New Orleans, they found that per capita consumption decreased about $\frac{1}{5}$ of a quart a week for each additional person.

Age.—Consumption of fluid milk varies with age, Oatego and Alexander (3) report that, in New Orleans, per capita consumption was 4.39 quarts a week for school-age children, 3.23 quarts for children under six years and 2.12 quarts for adults. From a survey of 537 families in two counties in Kentucky Roberts (11) found that milk consumption began to decline in the teens, reached the lowest level in the 30-39 year age groups and increased slightly in the 40 and over groups. Christensen (12), in a study of "Consumer Preference for Milk" in the State of Utah found that milk consumption declined with age and that fewer persons in Utah continued to drink milk as they grew older.

Sex.—Sex is another factor affecting the rate of milk consumption. Anderson and Hoofnagle (9) found that among children nine to 15 years of age, attending schools which participate in the U.S. "Special Milk Program", girls consumed about 15 per cent less milk than did boys. Roberts (11) found that, on the average, females drank about 20 per cent less milk than did the males.

Education.—Education plays a role in determining the rate of consumption of fluid milk. Gibson and Hoffer (6) reported that adequate amounts of milk were more likely to be consumed by families with high education and low income than by families with other combinations of high or low education and income. Other studies, e.g. Roberts (11) suggested education as a method by which milk consumption might be increased. Anderson (10), in analyzing the effects of the Special Milk Program in Los Angeles during the 1955-56 school year, reported that school pupils from low educational areas increased milk consumption, at school by 357 per cent whereas those from high education areas increased their consumption by only 197 per cent. Since students from high education areas drank more milk, per capita, than other students before the program was instituted, one may infer that the Special Milk Program has tended to narrow the range in consumption between the two groups.

Availability and Service.—Apart from research concerned with U.S. Federal programs of fluid milk consumption in schools the question of availability or service and its effects on milk consumption was not adequately explored in the literature reviewed for this article. However, in studies of milk consumption in U.S. schools researchers have found increases in consumption which they attribute, in part, to the availability of a frequent milk service. Downn (13) found that the highest rate of consumption in Tennessee schools was in those schools which participated in the National School Lunch Program[c] and the Special Milk Program and Anderson (10) reported that milk consumption doubled by the end of the first year (1955-56) in which Los Angeles schools cooperated in the federally-sponsored Special Milk Program. Anderson also noted that when milk service was supplied, in elementary schools, at noon and again at another period during the day, the rate of consumption was more than double that recorded when this service was available solely at noon. However, a noon service and two additional services did not increase consumption above the rate for service at noon and one other period. In a national study of milk consumption in schools Anderson (14) found that the average rate of consumption was higher in schools serving milk at noon and/or other times than in those serving milk at noon only.

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[c] See footnotes, page 141.

Place of Residence.—The consumption of fluid milk varies according to geographic areas and between rural and urban dwellers. Hopper (1) found that consumption varied between cities in Canada and that per capita consumption by farm household was greater than that of either rural non-farm or urban households. Christensen (12) concluded that farm families in the State of Utah consumed about 25 per cent more milk per capita than did urban families. Anderson and Hoofnagle (9), however, in studying "Milk Consumption by Children at School and at Home in Relation to the Special Milk Program" in 100 schools in northeastern United States found that, children in rural areas[d] drank 14-15 per cent less milk, at home and at school, than did those in "urban-suburban" areas whether attending a program school providing low cost milk or a non-program school.

Race.—Purcell (2), Oatego and Alexander (3) and Roberts (11) found that in the U.S. Negroes drank less milk than the white people. The reasons for this difference were not fully explored but Purcell (2) discovered a lack of statistical significance between such factors as income, price of milk, number of persons per household and consumption of fluid milk, as far as the consumption habits of the Negroes were concerned; the opposite held true with the white people.

Other Factors.—Other factors affecting milk consumption generally fall within the area of consumer preferences and habits.

In the studies reviewed consumer preference for milk was usually expressed in terms of "like the taste" or "dislike the taste," but habits usually reflected environmental or social conditions.

Gibson and Hoffer (6) in their study of milk consumption among urban families, reported that almost all respondents who drank milk did so because they like the taste, regardless of education or income. Among non-drinkers of milk, those with a low education and a small income usually said that milk was fattening, those with a low education and a high income disliked its taste; the two high education groups preferred coffee or tea but this preference was stronger with the high than with the low income group.

"Dislike the taste" was the main reason given by Utah adults for not drinking milk (Christensen) (12). Empson (4) suggested that local and regional habits or tastes were associated with low milk consumption and that tastes and habits may reffect environmental conditions.

The relative importance of psychological rather than economic factors as motivating forces influencing milk consumption was indirectly exemplified in the research work done by Oatego and Alexander (3); in which only 13 per cent of the variation in per capita consumption was explained by the multiple effect of such variables as 1) price, 2) income, 3) persons per family, 4) consumption of fluid milk substitutes[a] and 5) price per quart equivalent of selected milk substitutes.

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[a] See footnotes, page 141.

[d] See footnotes, page 141.

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[a] Including evaporated milk, condensed milk and powdered milk.

[b] Special Milk Program—Federal program established in 1954 to encourage an increase in the consumption of milk in non-profit schools and non-profit institutions concerned with child welfare through a system of reimbursement or inventive payments for milk consumed in excess of that provided under the National School Lunch Program.

[c] National School Lunch Program provides federal assistance to states through grants-in-aid and other facilities in the establishment, maintenance and operation of non-profit school lunch programs.

[d] Areas of fewer than 2,500 inhabitants.

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Directory of Farmers' Organizations and Marketing Boards in Canada, 1960. Ottawa, September 1960. pp. 29.

The sixth edition of the Directory. Organizations and boards are classified on a national, regional and provincial basis and further subdivided according to type of business.

Co-operation in Canada, 1959. Heighton, V. A., August 1960. pp. 17.

The twenty-eighth annual summary of co-operative activities in Canada.

Seasonal Changes in Quantities of Food Purchased. Johnston, Charlotte, I., Ottawa, July 1960. pp. 8 plus 7 graphs.

A statistical analysis of month-to-month purchases of dairy products and eggs, cereal products, meat and poultry, fats, general groceries, fruit, and vegetables.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

In Canada: The Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal, 34.

Economic Bulletin for Europe. Vol. 12, No. 1, Geneva, Switzerland. June 1960.

An article on Current Economic Developments in Europe notes that

> In almost all European countries a vigorous industrial expansion continued in the early months of this year, accompanied by rapid growth of international trade. The deceleration of the rise of output foreseen in the 1960 plans of the eastern European countries has not, as yet, materialized, though some signs of strain in their economies have as yet hardly been substantiated by any actual slackening of sions expressed about the narrowing margins for further expansion have as yet hardly been substantiated by any actual slackening of industrial growth. However, in most countries throughout the continent, the rise of output achieved in the remainder of this year is likely to depend, even more than last year, on the growth of productivity, with a relatively smaller contribution from rising industrial employment.

This article comprises seven sections. The first four deal with industrial production, current developments in agriculture, investment and consumption, and foreign trade developments and future plans in eastern Europe and the Soviet Union. The last three are concerned with continued expansion, trade and payments, and policies and prospects in western Europe.

A Note on the Introduction of Mathematical Techniques into Soviet Planning looks into the increasing use of mathematical techniques in economic planning, in the Soviet Union, since the reorganization in mid-1957 of industrial management and economic control agencies. This richly documented note gives special attention to Preconditions for the Use of Mathematical Techniques, Planning Independently of Prices, Transformation Functions and Optimum Programming, The Collection of Input-Output Data, Demand and Resource Maps, The Use of Linear Programming, and The Pricing Problem.

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A study concerned with agricultural credit as a means of promoting economic development—increasing agricultural output and improving the economic welfare of rural people. The author recognizes that "of itself" credit "does not create new resources". But, as he points out, "if dispensed under proper conditions, it may lead to increased productive power and provide the means for future economic growth. This implies both that the borrower puts the funds to better use in increasing production than the lender would have done, and that something is set aside out of the increased production to create more capital".

In Part I of his report, THE GENERAL FRAMEWORK, he discusses, in broad terms, the conditions required for economic development and those affecting the demand for agricultural credit and reviews the various aspects of the credit supply problems.

In Part II, APPROACHES TO THE AGRICULTURAL CREDIT PROBLEM, he deals with the means of increasing the supply of agricultural funds, the conditions under which loans are granted, the organization of governmental, cooperative and other credit agencies, the specific aspects of the development of co-operative credit societies, the characteristics of supervised credit, and the functions of central banks in relation to agricultural credit.

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An analysis of 455 farm businesses supplemented by economic data and benchmarks for the assessment of the economic situation "on the farm." These data and benchmarks are "of assistance in the understanding and formulation of policies for both agriculture as a whole and also individual farms."

Working and Living Conditions in Canada. Department of Labour and Department of Citizenship and Immigration. Ninth Edition. Ottawa. April 1960. pp. 72 and map of Canada.

A booklet chiefly designed to supply general information on working and living conditions to prospective immigrants to Canada. It has seven well-documented chapters on Population and Employment; Finding a Job; Wages, Salaries, and Earnings; Working Conditions; Education and Training; Living Standards; and Social Welfare Services. This attractive booklet has the added merit of illustrating its data with well-chosen pictures and well-drawn statistical charts and tables.

Proceedings of a Seminar on the Economic Aspects of Land Use, held at the Ontario Agricultural College, Guelph, September 11-13, 1957, pp.

This publication contains five of the six papers read and discussed at the Seminar. These five papers include: Economic Aspects of Land Use Decisions Made by Farmers, by Glenn L. Johnson of Michigan State University; The Function of Governmental Agencies in Developing Land Use Policies, by Raleigh Barlowe, also of Michigan State University; Research Problems Associated with the Economic Appraisal of Regional Land Use, by M. E. Andal of the Economics Division, Canada Department of Agriculture; The Cornell System of Economic Land Classification, by Howard E. Conklin, Cornell University, Ithaca, New York; and Research Techniques for Economic Appraisal of Private Land Use Decisions, by Earl O. Heady, Iowa State College.

Decision Making and Financing Farm Assets.—A paper presented by C. B. Baker, Department of Agricultural Economics, University of Illinois College of Agriculture, as the J. S. McLean Memorial Lecture at the Ontario Agricultural College, Guelph, February 1960.

The writer discusses the decision-making process under the following headings: Elements of Decision Making; Decision Making by Groups; and Decision Making and Financing Farm Assets.

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This report examines the economic structure of Britain's horticultural industry, assesses its competitive position in Europe and reviews the elements of a sound policy.

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This report "correlates" the "information provided by the various operational and research disciplines" for "the assessment of land for irrigation in western Canada". It is especially concerned with physical characteristics, climate and markets in the Bow River Project area, supplies a history of crop yields, develops farm budgets to evaluate land categories and makes "recommendations for continued investigation" of land classification problems.

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ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production[e]
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
		1935-39=100						1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	221.2	170.7	271.6	243.1	269.5	219.1	126.5	121.1	165.4
1960	230.6	217.5	170.6	264.4	236.6	274.7	222.7	128.0	122.2	....
1959										
Dec.	229.7	215.0	166.9	263.1	231.9	....	....	127.9	122.4	169.5
1960										
Jan.	230.5	214.6	171.6	257 7	230.8	266.7	221.9	127.5	121.6	173.5
Feb.	230.0	212.0	172.0	252.0	227.6	....	....	127.2	120 8	170.1
Mar.	229.6	213.6	175.1	252.2	227.8	....	....	126.9	119.4	171.9
April	231.3	218.3	180.5	256.2	234.8	277.9	223.4	127.5	120.9	166.6
May	231.3	220.0	182.3	257.8	236.5			127.4	120.2	167·8
June	231.9	225.1	185.2	265.0	240.6	....	....	127.6	120.8	167.6
July	232.2	221.8	173.6	270.1	242.2	....	....	127.5	120.5	164.3
Aug.	230.2	216.2	160.6	271.7	236.4	279.6	222.9	127.9	121.7	165.8
Sept.	230.4	217.0	160.4	273.6	239.9			128.4	123.3	167.5
Oct	230.3	215.5	161.7	269.4	240.2	....	....	129.4	125.8	168.0
Nov.	229.7	216.5	161.7	271.2	239.9	....	....	129.6	125.5	....
Dec.	230.1	219.6	162.7	276.5	242.3	....	....	129.6	125.3	....

Note:–See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes subsequent to July 1959 are subject to revision.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.
1960 indexes are subject to revision, since tax and interest rate figures are preliminary.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

(e) For a detailed description of concepts, sources and methods see D.B.S. Reference Paper (61-502) Revised *Index of Industrial Production, 1935-57.*

THE ECONOMIC SITUATION

Population.—Canada's population passed the 18,000,000-mark in mid-November and reached an estimated 18,020,000 on December 1, 1960.

Population estimates, by quarter, for the 1956-60 period, were as follows:

Year	March 1	June 1	September 1	December 1
1956	15,972,000	16,081,000	16,193,000	16,308,000
1957	16,420,000	16,589,000	16,745,000	16,860,000
1958	16,948,000	17,048,000	17,154,000	17,241,000
1959	17,340,000	17,442,000	17,550,000	17,650,000
1960	17,732,000	17,814,000	17,930,000	18,020,000

National Productivity Council.—Speaking in the House of Commons on a measure to provide for the establishment and operation of a national productivity council the Minister of Trade and Commerce said that "At a time when markets at home and abroad are becoming increasingly competitive, it is essential that Canadian industry be as efficient as possible. We believe that this task can best be carried out by enlisting the help of as many people as possible who are concerned with the production and distribution of goods."

He told the House that the National Productivity Council will consist of 25 members, five to represent industry and commerce, five to be from organized labor, five from agriculture and other primary industries, and five to be appointed from the general public; four members will be technically qualified persons from scientific agencies of departments of Government and another one will be the Executive Director responsible for implementing the work of the Council.

"The objects of the Council," according to the Minister's statement, are "to foster and promote the development of improved production and distribution methods; the development of improved management techniques; the maintenance of good human relations in industry; the use of retraining programmes to meet changing manpower requirements; the extension of applied industrial research; and the dissemination of technical information".

The Council will act as a policy-making body and assist in the establishment of regional and industry productivity committees.

Agricultural Development.—On December 15, 1960 the Minister of Agriculture asked the House of Commons to consider the following resolution:

> That it is expedient to introduce a measure to authorize the Minister of Agriculture to enter into agreements with provincial governments or agencies thereof for the undertaking jointly with those governments or agencies of projects for the alternative uses of lands that are marginal or of low productivity, projects for the development of income and employment opportunities in rural agricultural areas, and projects for the development and conservation of the soil and water resources of Canada; for the payment of provinces of contributions in respect of the cost of such project undertaken by a province or agency thereof; to authorize the Minister of Agriculture to undertake programs of research and investigation in respect of these matters; to provide for the establishment of advisory committees and the appointment of their members, and to provide for other related and incidental matters.

Gross National Product.—Canada's G.N.P., seasonally adjusted at annual rates, advanced by less than one-half of one per cent to $35,272 million in the third quarter of 1960. About half of that slight gain in the value of production stemmed from a small change in final product prices.

The slight recovery in the level of economic activity results from developments in both external and domestic demand. Exports of goods and services rose very sharply; the increase was concentrated in exports to European and other overseas countries. Exports to the United changed very little, allowance being made for seasonal factors, and reflected the recent lowering of levels of economic activity in that country. The final domestic demand sector was characterized by higher outlays for housing and non-residential construction and for investment at all government levels as well as increased wages and salaries paid by the federal government. Consumer expenditures remained at about the same level as in the second quarter; outlays for durables continued to decline and outlays for non-durable rose only very slightly.

The revival in exports and final domestic demand led to a marked increase in a total final purchases of goods and services but did not affect production; the bulk of the requirements were met by sharp cut-backs in inventories.

National income, seasonally adjusted, rose by one per cent in the third quarter of 1960. All major components, except corporate profits, shared in this advance. Personal income rose at a slightly higher rate than national income and personal disposable income at an even higher rate (by nearly 2.5 per cent).

Labor income rose by about one per cent. Small increases were recorded in most industries, the largest one being an increase of more than six per cent in forestry.

Balance of Payments.—Canada's deficit from international transactions in goods and services was sharply reduced in the third quarter of 1960. This deficit then amounted to $114 million which is less than one-quarter of the size of the deficit in the second quarter, only slightly above one-third of the deficit in the third quarter of 1959, and less than in any quarter since 1955. This narrowing of the deficit is chiefly attributable to unusual appearance of a surplus of $89 million on commodity account and a reduction of the deficit from non-merchandise transactions to $203 million.

The current imbalance declined to $894 million in the first three quarters of 1960 from $1,153 million in the corresponding period of 1959. This contraction is attributable to a rise of over $300 million in merchandise exports overseas. Merchandise imports rose slightly and the deficit from non-merchandise transactions rose to $764 million; this deficit equaled 85 per cent of the deficit in the three quarters.

External Trade.—The value of Canada's total commodity exports to all countries rose to $4,953.8 million in the January-November period of 1960 from $4,656.5 million in the corresponding period of 1959. Imports, on the other hand, rose only to $5,069.4 million from $5,068.5 million. The import balance was lowered to $115.6 million from $412 million. Commodity exports declined to $475.7 million in November 1960 from $495.6 million in November 1959; corresponding figures for commodity imports were $514.9 million and $480.2 million respectively.

Commodity exports to the United States dropped to $2,817.6 million in the January-November period of 1960 from $2,898.1 million in the corresponding period of 1959; imports rose to $3,412.9 million from $3,411.9 million. Exports to the United States in November 1960 declined to $256.9 million from $301.2 million in November 1959; imports from the United States rose to $326.1 million from $304.2 million. The November import balance rose to $69.2 million in 1960 from $3 million in 1959 and the total for the January-November period to $595.3 in 1960 from $513.8 million in 1959.

Exports to the United Kingdom in the January-November period rose to $849.9 million in 1960 from $716.4 million in 1959 and imports declined only very slightly to $542.1 million from $542.2 million. Exports to the United Kingdom rose to $85.8 million in November 1960 from $79.1 million in November 1959; imports rose to $58.9 million from $56.9 million. The November export balance rose to $26.9 million in 1960 from $22.2 million in 1959 and to $307.8 million in January-November 1960 from $174.2 million in the first eleven months of 1959.

Exports to other Commonwealth countries in January-November rose to $299.2 million in 1960 from $253.5 million in 1959; imports rose to $260.6 million from $225.2 million. November exports declined slightly to $27.6 million from $27.8 million; imports rose sharply to $36.4 million from $24.7 million.

Commodity exports to all other countries, as a group, rose to $987.1 million in January-November 1960 from $788.6 million in the first eleven months of 1959; imports declined to $853.8 million from $889.2 million. November exports to these countriss rose to $105.4 million in 1960 from $87.6 million in 1959; imports declined to $93.5 million from $94.4 million.

Wholesale Price Index.—Canada's general wholesale price index (1935-39 = 100) dropped to 229.7 in November 1960 from 230.3 in October and 230.2 in November 1959. The vegetable products group index dropped to 199.6 in November from 201.5 in October, mainly because of lower prices for western grains, livestock and poultry feeds, raw rubber, and vegetable oils. The animal products index edged up to 251.1 from 251.0.

Consumer Prices.—Canada's consumer price index (1949 = 100) moved from 127.9 in December 1959 to 129.6 in November and December 1960. The index averaged 126.5 for the year 1959 and 128.0 for 1960.

The food index dropped from 125.5 to 125.3; egg prices declined by six cents to 62 cents and the prices of most cuts of beef and veal, lettuce, grapefruit, and some domestically-grown vegetables were also lower. Prices were higher for oranges, apples, fresh tomatoes, pork and chicken.

Employment.—Industrial employment declined in October from the seasonal peak reached in the summer months of 1960. The composite index number (1949 = 100) dropped to 121.4 in the latter part of October from 123.1 at the end of September and 124.4 at the end of October 1959.

The composite figure of average weekly wages and salaries rose slightly to $76.66 from $76.56 in September and $74.66 in October 1959. The increase over the year amounted to $2.

Labor Income.—Canada's paid workers received about $1,584 million in October 1960 as salaries and wages and supplementary labor income, compared with $1,604 million in September 1960 and $1,545 million in October 1959. Labor increase in the January-October period rose to $15,307 million in 1960 from $14,724 million in 1959.

Consumer Credit.—Balances outstanding on the books of sales finance companies at the end of October 1960 totaled $1,232.3 million, a decrease of 1.1 per cent from $1,245.5 million at the end of September and an increase of 6.6 per cent from $1,156.4 million at the end of October 1959.

Cash loans and instalment credit held by companies licensed under the Small Loans Act totaled $540.9 million at the end of October 1960, compared with $537.5 million at the end of September and $465 million at the end of October 1959.

Accounts receivable held by department stores totaled $313.5 million at the end of October 1960, compared with $304.7 million at the end of September and $265.3 million at the end of October 1959.

Wholesale Sales.—Wholesale sales were estimated at $689.8 million in October 1960, compared with $721 million in October 1959. Sales in the January-October period rose to $7,011 million in 1960 from $6,932 million in 1959.

Retail Sales.—Retail sales in Canada in October 1960 were estimated at $1,394.8 million, a four per cent decline from the $1,452.6 million recorded in October 1959. Over the January-October period sales declined by one per cent to $13,198 million in 1960 from $13,214.2 million in 1959.

Farm Prices of Agricultural Products.—Canada's index of farm prices of agricultural products (1935-39 = 100) was estimated at 237.9 for November 1960, compared with 238.5 in October and 233.8 in November 1959. Prices were higher in November than in October 1960 for potatoes, dairy products, and poultry and eggs; they were lower for livestock and also lower, but only fractionally, for grains. November prices were lower in 1960 than in 1959 for potatoes but higher for grains, dairy products, livestock, poultry and eggs; gains in livestock prices, however, were very small. The marked increase in grain prices from November 1959 to November 1960 in chiefly attributable to the higher average quality crop harvested in the Prairie Provinces in 1960.

Farm Income.—In the first nine months of 1960 Canadian farmers received about $2,030.4 million from the sale of farm products; this figure is only slightly below the all-time peak of $2,032.8 million reached in January-September 1959 and about one per cent above the $2,008.2 million realized in the corresponding period of 1958.

Under the Prairie Farm Assistance Act, the Western Grain Producers' Acreage Payment Plan, and the Federal-Provincial Emergency Unthreshed Grain Assistance Policy farmers in the Prairie Provinces also received about $51 million in January-September 1960, compared with $21 million in the corresponding period of 1959 when most of the payments to farmers were made under the provisions of the Prairie Farm Assistance Act.

Total cash returns to farmers from their farming operations thus amounted to $2,081.5 million in the first nine months of 1960. This estimate the highest on record for these nine months, slightly exceeded the previous peak of $2,054.2 million, reached in the first nine months of 1959.

The largest gains in cash income were recorded for wheat, potatoes, fruits, cattle, dairy products and poultry meat; the largest reductions were recorded for barley and hogs.

Wheat.—Wheat supplies remaining on or about November 1, 1960 in the four major wheat exporting countries, for export and carryover at the end of their respective crop years totaled 2,798.5 million bushels, a nine per cent increase from the supplies of 2,558.4 million bushels a year previously. Supplies at November 1, by country, in million bushels and with figures for 1959 in brackets, were as follows: United States, 1,887.2 (1,677.6); Canada, 796.9 (738.5); Argentina, 39.5 (68.2); and Australia, 74.9 (79.5).

Total exports of wheat and wheat flour in terms of wheat from these four countries totaled 272 million bushels in the August-October period of the Canadian crop year, compared with 212.1 million bushels in the previous crop year. Wheat exports from all four countries were higher than a year earlier; they were as follows, in million bushels, with figures for August-October 1959 in brackets: United States, 138.5 (100.3); Canada, 80.3 (76.3); Argentina, 25.5 (15.1); and Australia, 27.7 (20.4).

CORRIGENDUM

In October 1960 issue of The Economic Analist, Table 6, page 115, under "Total improved area," replace 9,773 by 8,522 for the year 1931; and in Table 10 page 119, under "Number of farms" replace *531* by 733 for the year 1936.

DECISION-MAKING ON THE FARM

HELEN C. ABELL

No day passes on the farm without a decision being made concerning the operation of either the farm or the farm home.

These decisions vary in importance but most of them relate to the earning or spending of income. They all affect the farm family in some manner; they affect the success and, even the survival of the farm business as well as the well-being and the future of all members of the family.

Far too much of the technical and other types of information pertaining to agriculture and home economics is assembled and then handed to the public as if the farm home were a locale for decisions quite distinct and independent from practice and policy decisions made for the farm business itself.

The Special Study of Ontario Farm Homes and Homemakers[1] clearly demonstrates that, on typical Ontario farms, the family is a closely-knit social unit in which husband and wife and frequently even the children and other persons do their share of the farm and of the home work and help make decisions or at least have a word to say about the acceptance or rejection of some of the decisions. This statement was supported by answers given by the homemakers, when asked to identify the person(s) concerned with decisions made regarding 17 different types of farm and home activities; most of these activities entailed the earning or the spending of family income.

Size and Composition of Farm Households.—In one of every four of the 352 farm homes visited one or more persons other than members of the primary family (husband, wife and children) were living in the home.

The number of persons living in the home averaged from four to five (4.6) and ranged from one (a widow living alone) to 11 (a husband, wife and nine children). Sixty per cent of the 352 households included only the primary family; 20 per cent included the primary family and one or more other persons, most of whom were adult relatives—parents, brothers, in-laws, etc.; 10 per cent consisted of the husband and wife living alone; five per cent of the husband and wife and of one or more other adults; and the other five per cent were families without husband-wife relationship such as a widow or a widower living with or without other persons.

In six families the homemaker was the farm operator; three of these homemakers were widows and the three others managed the farm business because their husbands were fully employed in non-farm occupations.

On about 25 per cent of the farms people other than the husbands were concerned with the ownership, management or operation of the farm.[2] On 13 per cent two or more households were partly or fully supported by a single farm business.

In speaking of decision-making on the farm it is thus important to recognize that, in many homes, persons other than the primary family not only share the living arrangements but also have a definite stake in the success or failure of the farm as a business concern.

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[1] A study conducted by the Home Economics Service and the Farm Economics and Statistics Branch of the Ontario Department of Agriculture in co-operation with the Rural Sociology Unit of the Economics Division of the Canada Department of Agriculture.

[2] Only two farms were operated by farm managers but many were operated by someone other than the husband of the female respondent or in association with the husband or wife. In some cases the husband had an off-farm job and other informal family arrangements had been made to operate the farm by sons, brothers, fathers or other persons.

Who Plans and Decides?—Persons usually making plans or decisions regarding the 17 selected farm or home activities considered in the study are identified in Table 1. The term "other person" includes relatives, children, male business partners, and any person other than the homemaker or her husband. "Combination of persons" is used in cases where a husband and some one other than his wife make decisions or where a wife and some one other than her husband does so.

In most of the families (from 54 to 81 per cent) the husband and wife were jointly concerned in decisions relating to 14 of these activities. In 48 per cent the husband alone made farm plans and decisions and in 47 per cent he alone planned the purchases of farm machinery and equipment. These two responsibilities are generally considered to be the chief business responsibilities of the farm owner or operator, responsibilities which he cannot very well afford to

Table 1.—Person(s) Responsible for Selected Farm or Home Decisions, 352 Ontario Farm Families, July 1959

Kind of decision	Person(s) making decisions						
	Husband and homemaker (with or without other persons)	Husband alone	Homemaker alone	"Other" person(s) or combinations of persons	Question not answered	Total	
						Per cent	Number of families
	— per cent of families —						
Planning purchases of:							
Household appliances and equipment	81	3	13	2	1	100	352
Furniture	78	1	15	2	4	100	352
Clothing	55	*	39	5	1	100	352
Farm machinery and equipment	35	47	0	17	1	100	352
Food	3	*	92	2	2	100	352
Recent housing changes (Made in past 5 years)							
Heating and/or cooling	81	13	4	2	0	100	48
Major remodeling or improvements	80	9	7	4	0	100	142
Storage space	78	3	12	7	0	100	41
Floors and flooring	74	7	17	2	0	100	59
Plumbing and/or water supply	73	9	12	6	0	100	86
General maintenance							
—exterior	69	21	3	7	0	100	142
—interior	63	4	31	2	0	100	142
Miscellaneous home and/or grounds improvements	54	19	19	8	0	100	67
Current plans and decisions							
Priority of purchase of desired farm or home equipment	67	16	9	8	0	100	310
Plan of farm finance	62	23	1	14	0	100	352
Home plans and decisions	58	0	37	5	0	100	352
Farm plans and decisions	34	48	1	17	0	100	352

NOTE:— (i) The symbol * means less than one per cent.

(ii) As may be expected, all farm households planned to buy something for home or farm use.

"Recent housing changes" are changes made within the five years preceding the interview. For each of the eight items under this heading changes are obviously reported only for those families which had made such changes.

As for "Priority of purchase of desired farm or home equipment", under "Current plans and decisions", only the 310 families planning the purchase of both these types of equipment in the near future are considered.

delegate to other people. If he cannot delegate them he may, nevertheless, share them with others. Indeed, he often does so. In our Ontario study 34 per cent of the farm operators interviewed consulted their wives in making their farm plans and decisions and 35 per cent consulted them on matters relating to the purchase of machinery and equipment. Moreover, in 17 per cent of the farm households some one other than the husband and his wife had a say in decisions pertaining to farm plans and purchases of machinery and equipment. The co-operation, between husband and wife, was even more apparent in the case of two other farm-oriented activities. In 67 per cent of the families decisions as to whether farm or home equipment should next be purchased were made jointly by husband and wife.[1] In 62 per cent the financing of the farm business was planned jointly by the two and in only 23 per cent did the husband look after the financing of his farm without any consultation with his wife. The size of business did not seem to have any relation to the extent of co-operation between man and wife in the discussion of financial problems.

As may well be expected, however, food purchases were the sole responsibility of as many as 92 per cent of the homemakers. In only three per cent of the households was the husband consulted in such matters.

Farm women do not only play a managerial or decision-making role. Many of them are also a very active part of the farm labor force. In our study, for example, 98 per cent of the adult women did some work on or for the farm. Much of this work, such as keeping farm accounts, operating farm machinery, feeding poultry and livestock, and marketing of farm produce would have to be done by the operator or hired workers if women confined their activities to the household. One may also note that women's interest and participation in farm work does not seem to decline very much with age. Indeed, as many as 25 per cent of the farm wives interviewed are still doing as much farm work now as when they first became farmers' wives and another 22 per cent do even more work now.[1]

Conclusion.—Our findings suggest that efforts to serve and work with farm families, whether they take the form of governmental policies and extension and other educational programs or of activities sponsored by farmers' organizations, should reflect the knowledge of awareness that farm families live and work as closely-knit entities. Technical, economic and social knowledge must be directed towards the whole family. One may even venture to say the same for home economics, as this is not always the exclusive domain of the housewife.

In brief, one sees the need to strengthen the "home" aspects of the management of the family farm and the "economic" aspects of home economics. This dual strengthening should lead to better managerial decisions on the farm front, decisions that will favorably affect the future of individual farm families and of the agricultural industry as a whole.

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[1] Of the 352 homemakers 93 per cent were aware of and discussed the needs for both farm and home equipment with members of their family or other people; 60 per cent said that farm equipment and 31 per cent that home equipment would be most likely purchased first. The reasons given for each type of priority suggest that most of the homemakers were not only aware of the needs for both types of equipment but were also able to make a sound economic assessment of the relative merits of both types of purchases.

[2] Some of these women had been farmers' wives for less than four years and some for over 40 years; the average period was 16 years. Their ages averaged 44 years and ranged from 21 to 81 years. The ages of their husbands averaged 47 and ranged from 19 to 84 years.

NOTES ON THE COMMON MARKET[1]

The European Economic Community, often called the Inner Six or the Common Market, is a trading group consisting of the Netherlands, Germany, Belgium, Luxembourg, France and Italy. These countries are in the process of establishing a customs union which means not only that goods will be traded without tariff between themselves but with a common external tariff.

Another trading group is the European Free Trade Association or the Outer Seven, consisting of the United Kingdom, Norway, Denmark, Portugal, Switzerland, Austria and Sweden. These countries are in the process of developing a free trade association which, when established, will allow free trade among themselves but each will have its own tariff arrangement with outside countries. E.F.T.A. does not include agricultural products as a part of its operation, although it is expected that there will be some efforts toward freer trade between the Seven.

The Organization for European Economic Co-operation will soon be replaced by the Organization for Economic Co-operation and Development. The O.E.C.D. is still at the organization stage and it provides for the inclusion of Canada and the United States as full members, as well as European members of the O.E.E.C. These European members include all of the Six and the Seven plus most of the other countries of Europe except those behind the Iron Curtain. This organization has been responsible for the co-ordination of many activities in Europe and has provided a forum for the exchange of information.

In May 1960, Canada's Minister of Finance said that "Both the Six and the Seven represent important markets for our agricultural products. We have been and are concerned lest European trading arrangements should lead to inward-looking and discriminatory practices inconsistent with GATT objectives, either separately on the part of either the Six or the Seven or collectively in any accommodation which might be sought between them, and thus to a breakdown of the world-wide trading system in the establishment of which we have all invested so much since the war".

Estimates may differ but the place which agriculture occupies in the Common Market Community may be briefly described as follows: It contributes about 12 per cent of the national product of the Community and provides employment for about a quarter of its working population. The Community's output of eggs, potatoes, sugar, vegetables, meat, cheese and butter is at present more or less equal to its total consumption of these products. For example, between 1950-52 and 1957-58 the percentage of wheat consumption covered by the Community's production increased from 81 to 87 per cent; for fruit the current figure is about 90 per cent. Only in oils and fats (excluding butter) is Community production very much lower than consumption; about 50 per cent of the consumption of these products are covered by imports. If the Community includes the Overseas Associated Territories of the Six, then the percentage of oil imports will be reduced. The agricultural production of the member states of the E.E.C. probably represents close to 90 per cent of their requirements. Nevertheless, the Community is the largest importer of agricultural products in the world. It absorbs almost one-third of the world agricultural imports compared with one-fifth for the United Kingdom.

From 1952 to 1959 Canadian exports of agricultural products to the Six averaged about $160 million, about one-sixth of all our agricultural exports and about 40 per cent of all Canadian exports to the Six. The range was from a high of about $235 million in 1952 to a low of $110 million in 1955. In 1959 Canada exported $140 million of goods originating on the farm to the Common Market. About 40 per cent of these exports went to Germany, 40 per cent to the Netherlands and Belgium together, and slightly less than 20 per cent to France and Italy.

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[1] Part of an address on the Common Market by A. H. Turner, Director, Economics Division, given at the 1960 Federal-Provincial Agricultural Conference.

Wheat, including Durum, is the biggest item and usually has represented two-thirds or more of the total trade. In 1959, flaxseed, rapeseed, hides and skins, dry skim milk, oats, barley, mustard seed, tobacco, meats, and dried eggs followed in that order of value, all with more than one million dollars worth of exports. Other items of interest which we have exported in smaller amounts to the Six are apples, furs, soybeans, and rye. The total value of some exports may be lower than that of wheat exports but, considering the total volume of these products available for sale, the Six may offer them a market outlet almost as important as that for wheat.

Looking at recent developments one realizes that great progress has been made in the industrial sector of the Common Market. The economies of the Six are in a healthy state and it may not be very much of an exaggeration to say that countries like Germany and France are witnessing an economic boom. People there talk about employment and not about unemployment in the industrial sector, only a few people being underemployed among the physically able. This healthy situation is encouraging people to leave their small and unprofitable farms and is even encouraging people from other countries, particularly Italy, to move to the industrial areas of Germany and France. Not only does industrial development offer an opportunity to leave unprofitable farms and find more remunerative employment in industry, it also offers an opportunity to reorganize the structure of agriculture.

Canada is sending Trade Missions over and hopes to expand or at least maintain her share of the trade arising from these economic developments.

Under the Rome Treaty, original document or Convention establishing the Six, a major part of the integration of the economies of the Six Common Market countries is to be accomplished through the adoption of a common agricultural policy. This common policy when adopted will, of course, also have an important relationship to the over-all commercial policy of the Six.

In this agricultural trade section, it is not yet clear what the final developments may be although the European Economic Commission, the administrative arm for the Six, has made some agricultural proposals. The Council of Ministers has returned these proposals to the Commission and countries of the Six for further study. It is thus not possible to forecast the exact implications for Canadian trade on the basis of a known agricultural policy for the Six and it is not possible, either, to deal with agricultural trade arrangements which may be made with third countries. However, one of the chief proposed instruments of possible protection is the use of a variable levy in addition to any tariff which may be imposed. A variable levy, simply stated, is a charge levied on certain agricultural imports, according to the difference between the world price as calculated at a particular time and a price support level in effect in the Six. It has not been decided yet how often the world price calculation will be made but the original proposals suggested that import certificates would not be valid for more than three months. This is a very short time to complete a trading transaction, particularly so for more distant countries such as Australia and New Zealand. Early proposals did not exclude the possibility of state trading, bilateral agreements, and other measures which might allow discrimination in dealing with third country trading partners. However, although there is no agreement yet, the latest proposals tend to lean less (except for the transition period) on this type of non-tariff measure than did the original proposals.

The latest proposals may be described as follows:

A system of variable levies will be provided for wheat, fodder grain, sugar and dairy produce. These levies are intended to equalize differences in the price level between the world market and the importing country. By October 1, 1967 these levies must be the same in all countries of the Six; in other words, there will be a common external levy.

Eggs and Poultry.—A system of variable levies, to be introduced on January 1, 1961 will be based on differences between prices of fodder grains within the Six. A low customs duty will also be set up to take account of differences in conditions of production not caused by differences in the cost of fodder. Likewise, a minimum import price is to be fixed as a safety measure, with effect from January 1, 1961. It will have to be jointly applied. As soon as the import price—including levies and duties—falls below the minimum import price, the levies will be correspondingly increased.

Pork.—The same type of levies will apply as for eggs and poultry except that, until January 1, 1964, the levies will be fixed on the basis of the difference between the price of pork on the national markets and on the world market.

Beef.—From January 1, 1961 onwards an effort will be made to co-ordinate bilateral contracts. The Member States are being asked to amend these contracts so that they will expire in 1963. On January 1, 1964, at the latest, the common external tariff must have become an established fact. From January 1, 1962 the external tariffs are to be gradually brought into line. To make it possible for the common market to be established by January 1, 1964, the various governments will, from January 1, 1962 onwards, fix a minimum import price which shall be uniform by January 1, 1964. An exception is to be made for frozen meat, for which a system of import certificates is envisaged.

Fruits and Vegetables.—The common external tariff will become effective on January 1, 1967. The same rules and regulations will apply for fruits and vegetables as for trade within the Community.

Wine.—A uniform import duty is to be worked out by January 1, 1970. Up to that date the existing Treaty regulations will be applied.

Before December 31, 1960, the Commission will submit proposals for the co-ordination of the national marketing organizations for rice. It is also devising proposals for a common policy for oils, fats, fish, tobacco and forestry.

The dates, as suggested in the original proposals, conform with the attempt to end the transition period in about six years. However, because of the delays which have occurred and of the need to agree within the Six, this transition period may exceed six years and some of the proposed policies may not become effective as early as suggested, even if there is acceptance, in principle, of a particular proposal.

If we assume the variable levy to be the main protectionist feature, then our interest lies in reasonable support prices which will not encourage uneconomic production to the extent of excluding imports. It is desirable that third countries, such as Canada, who can produce some agricultural products more economically than other countries, will be allowed sufficient access to the Common Market, not only to maintain present exports but also to participate in the growth of that market by letting consumers have a free choice of goods which they can supply. This growth is expected to be considerable and we in Canada, as friendly trading partners, hope to participate in it.

If the production of some products were unduly encouraged part of this production might have to be exported (likely at concessional prices) to countries now being supplied by other "traditional" exporters.

The variable levy technique creates uncertainty of access to the market, even if its proponents claim that it cannot be severely protectionist if governments do not add to the funds for the support of internal production. When funds do not come from sources other than the levies themselves and when, at the same time, no imports are possible, there is then no money for the support of uneconomic production. The levy may then be lowered to revive trade.

Because of disturbing and uncertain elements in the proposals made thus far by the European Economic Commission and other Common Market institutions Canada joined, in June 1960, with four other agricultural exporting countries for direct consultations in the capitals of the Six. Government officials of these countries, generally from Departments of Agriculture, Finance, Economic Trade, and Foreign Affairs, were urged to be outward-looking in agricultural trade policy and to provide reasonable access on known terms for traditional products which the five exporting countries as well as other non-member countries sold to the Six. These five countries also urged the Six to bring their agricultural proposals to the GATT for consideration as soon as possible.

The United States, Australia, Argentina and New Zealand, as well as Canada, composed the team of exporters. They pointed out that now that balance of payment difficulties had disappeared they expected to receive some return in trade for terms negotiated on a multilateral basis at various meetings of GATT. They reminded the Six that most of the exporting countries were large buyers of industrial goods from the Six. They did not object to countries supporting the prices of agricultural products but asked for non-price measures that would help improve the structure of agriculture rather than high prices that maintain or increase uneconomic production. For example, by raising the price support for wheat substantially France could produce a great deal more although it might be better in the long run to improve livestock production.

Briefly, these are the highlights of the agricultural trade problem. Canada's Tariff Delegation is reviewing and evaluating the Common Market tariffs at the current meeting of GATT in Geneva. We are pressing for reasonable access and urging that the agricultural policy to be adopted will not involve restrictions on trade which would impair the traditional trade relations between the Six and outside countries, including Canada.

I believe it most appropriate to conclude with a quotation from the opening statement of Mr. H. B. McKinnon, Chairman of the Canadian Gatt Tariff Delegation:

"This is another day; new and different problems in the sphere of economic and commercial policy have arisen. Some of them present quite novel aspects of considerable complexity and difficulty. We are here to deal with a number of these in the months to come. Many of the most difficult matters we shall have to discuss arise from decisions to work together on a regional basis and to intensify economic co-operation within particular groups of countries.

With the marked improvsment in financial position of many of the important trading countries over the past decade; with the welcome, though not yet complete, abolition of discrimination and quantitative restrictions, tariffs are again playing a more significant role in regulating trade. It is right to emphasize, as speakers before me have done, the importance of the new round of tariff negotiations that is to begin next January. However, the work with which we shall be concerned before the New Year, particularly the renegotiation of tariff bindings of the members of the European Economic Community, is of critical importance.

Canada has on many occasions expressed its sympathy with and understanding of the economic and political objectives of the European Economic Community. A liberally-oriented EEC should provide an expanding market to other countries. In this connection, my Government has welcomed the Community's declaration that it wishes to 'pursue vis-a-vis non-member countries— a liberal policy which takes their anxieties into account'. We have to examine that essential feature of the new Community—the common tariff, which is to replace the present national tariffs. We must consider whether the present terms of access to the markets of The Six, paid for with concessions by contracting parties, are to be maintained under the proposed common tariff. If not, ways must be found of restoring the balance of mutual advantage. A number of countries depend for their export income on a narrow range of products and it is what happens to these particular products that matters to them; no theoretical argument as to the general incidence of the common tariff can meet their legitimate concerns."

AN APPROACH TO THE SMALL FARM PROBLEM IN CANADA

R. A. Stutt

A Special Committee of the Senate of Canada was appointed in early 1957 "to consider and report on land use in Canada and what should be done to ensure that our land resources are most effectively utilized for the benefit of the Canadian economy and the Canadian people". During that first year the Committee considered the broad aspects of the land use problem. Since then, however, it has given special emphasis to the problem of the small uneconomic farm unit.

To perform its task, the Committee "invites the best minds in the country to set out their views as to the appropriate solutions". During the 1959 session of Parliament, for example, it called on many expert witnesses from all parts of the country. These included federal government officials, provincial ministers and deputy ministers of agriculture in each province, the leaders of national farm organizations and of provincial co-operative organizations, and representatives of the forest industry.

The Government of Canada has indicated that rural development is a part of its national agricultural policy. On August 30, 1958 the Prime Minister stated in Parliament, that "as a means of meeting the small farm problem the government has under consideration ways and means of improving the level of living for farmers on small farms by means of better land use, encouraging the formation of economic family farm units, improving technical training, extending unemployment insurance benefits to certain classes of farm workers, and by extending the vocational and technical training agreement for the benefit of those who wish to enter new occupations".

Public interest has also been expressed, though the Senate Committee, in the welfare of those who work as farmers on a full-time basis but whose farms are too small to provide an adequate income and a reasonably high level of living. Evidence presented to the Committee showed that the problem included mainly those full-time farmers on holdings with an inadequate capacity to provide a fair level of living and who for various reasons or lack of opportunities are unable to make a satisfactory adjustment. There was a general desire to avoid levels of material well-being in any group that were out of line with those of other groups in our society. As in the case of the United States, most of the Canadian federal and provincial agricultural assistance programs are considered to be of most benefit to the more efficient commercial farmers. Some new program might, therefore, be developed or changes made in present programs to help the small farm operator.

We do not have precise information as to the number and extent of small farms in Canada. Most of the information presented to the Committee was obtained from the 1951 and 1956 reports on the Census of Agriculture and is now outdated. Nevertheless, these data may suffice to indicate that many of our farms (probably between one-quarter and one-third) do not produce a volume of business adequate to attain the level of living desired by the average farm family. We could easily lay our finger on certain regions of chronically depressed farm incomes in all parts of the country.

A great deal of information is available from studies made by federal and provincial governments, universities and other research agencies, but a complete inventory and a reliable appraisal of all land resources has yet to be made in Canada. To achieve these and other objectives the Special Committee of the Senate on Land Use in Canada, in its report of July 1959, recommended action in two broad areas as follows:

(a) speeding-up and expansion of work on soil and economic land use surveys; more research on the management of our water resources; more regional farm business studies to indicate specific requirements in terms of farm size, organization and practices according to the physical characteristics of the land and prevailing conditions.

(b) creation of a special agency to assemble, co-ordinate and disseminate the findings from all types of agricultural research done by federal and provincial departments, universities and agricultural colleges, and other research organizations; an expanded extension service in farm planning, management and use of credit; an expanded program of vocational and technical training; improvement of governmental employment services particularly in low-income farm areas and institution of a special counselling service; extension of re-settlement assistance to any farmer on a small uneconomic farm unit wishing to move to another area of employment after due consideration of the existing farm potential and employment situation.

The concluding recommendation of the Committee in its report to the Senate at that date, was that the Canada Department of Agriculture send a delegation to the United States to study and report on the Rural Development Program. The Department acted promptly on this request and in September and October 1959, a four-man delegation spent about three weeks in Washington and in the seven states: Kentucky, Wisconsin, Minnesota, Michigan, Washington, Montana and Maine.

The report of the delegation, "A Review of the Rural Development Program in the United States of America", was submitted to the Committee and to the Minister of Agriculture on March 3, and members of the delegation were also witnesses at a second session of the Committee on March 10. The interest of the Committee was so great that it invited Paul V. Kepner, Deputy Administrator of the Federal Extension Service in Washington, and Sherman Weiss, Northern Areas Resources Development Specialist at Hayward, Wisconsin, to appear as witnesses at its March 31 session. They corroborated the description and analysis given by the Canadian delegation and gave additional information on their personal experiences and on the operation and achievements of the rural development program.

The Committee made a brief enquiry into the various types of related programs carried on in Canada by federal, provincial or local governments, public bodies or private citizen groups. These programs were concerned with industry and labor, forestry, recreation and tourist trade, education, leadership, public welfare and agriculture. From information gathered at the 1960 and previous sessions the Committee attempted to build a broad picture of existing programs and agencies dealing with the improvement of conditions in rural areas. It is expected that this part of its work will be completed, at the next session of Parliament, with a review of extension programs and other educational aids such as vocational training and counselling.

The work of the Committee has attracted a considerable and encouraging amount of attention. It has provided a setting for a much broader public understanding of the problems of low income rural areas and for policies designed to improve the pattern of land use and the management of natural resources in Canada.

The Committee came to some definite conclusions regarding the need for a self-help rural development program. In its second interim report to the Senate in July 1960 it suggested:

(1) (a) that further research be undertaken to define more clearly the nature of the problem in low-income areas and to pinpoint their location.

(b) that a Federal-Provincial Rural Development Program be instituted to deal with areas of greatest need.

(2) that in implementing such a program the provincial governments participate on a co-operative basis; that both provincial and local authorities assume major responsibility for the identification of problems and needs of local areas and the initiation, planning and development of appropriate action programs.

(3) that the Federal and Provincial governments supply financial and technical assistance, the financial assistance to be supplied through a cost-sharing agreement.

(4) that the Federal and Provincial governments expand their farm-management research and service activities and provide for the expansion of educational facilities, with special emphasis on prompt dissemination of the results of research.

(5)that there should be some co-ordination of the work of the Federal Departments of Agriculture, Northern Affairs and National Resources, National Health and Welfare, Labour, Trade and Commerce, Fisheries, Forestry, and Citizenship and Immigration with regard to a Rural Development program.

(6) that the Special Committee of the Senate on Land Use be reconvened at the next session of Parliament to study water conservation, drainage, forestry, encroachment of cities and industrial areas on agricultural lands, to invite the Extension Services of the provinces to describe their extension programs, problems and plans for improvement and expansion, and to consult with them as to the appropriateness of an approach similar to that taken under the Rural Development Program in the United States.

THE SOVIET PRODUCTION PLANS AND FOREIGN TRADE IN FARM PRODUCTS

E. Jaska

Official Soviet statistics indicate a considerable increase in the U.S.S.R.'s foreign trade in agricultural products in recent years.

The increased exports of many commodities (grains, mainly wheat) are largely directed to other Eastern European countries and to Eastern Germany (grains, butter, eggs, cheese, meat). Exports of special crops to Western Europe have risen: flax is by far the leading crop in this group. Imports of many products associated with higher standards of living but not produced domestically in sufficient quantities (coffee, tea, coca, fruits, wool, tobacco) have also risen. Increases in domestic production, however, have led to a decline in imports of products such as meat, live pigs, eggs, butter and edible vegetable oils.[1]

Grains.—Exports of wheat from the U.S.S.R. have reached again the high levels prevailing during the early 1900's. For the three-year period from 1956-57 to 1958-59 exports averaged about 150 million bushels annually. In 1958-59 the U.S.S.R. exported about 216.8 million bushels of wheat, of which 150.6 million bushels moved to Eastern Europe and 51.4 million bushels to

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[1] Economic Commission for Europe (ECE/FAO Agriculture Division), United Nations. *The Agricultural trade of the USSR and other countries of Eastern Europe* 1953-57. A statistical review, Geneva 1958. p. 16.

Western European countries—France, the Netherlands, Norway, Sweden, Austria, the United Kingdom, Denmark, Finland and Belgium. In the same year the Soviet Union also exported about 17.5 million bushels of rye, 15.4 million bushels of barley, 7.9 million bushels of corn and 14 million bushels of oats.[1]

In estimating the volume of Soviet wheat supplies available for export in future years one must remember that the people of the Soviet Union consume bread which is made from rye and wheat. Barley, oats, and corn are also used for human consumption. The volume of wheat available for export thus depends, to a large extent, on the size of the rye and other grain crops and on the use of these crops. Foreign trade in grain also depends on the political dictates of the government; it thus becomes exceedingly risky to attempt to forecast the volume of wheat and other grains available for export and the size of exports.

An official statement by Premier Khrushchov in 1957 stresses the importance of grains in the Soviet economy. Khrushchov said that no less than four billion poods (about 65 million tons) of fodder grain are needed annually for livestock production and that domestic needs for human consumption in urban areas, who depend on government sources for their supplies, could be estimated at about 35 million tons.

Adding these quantities to the amount used by the rural population, for seeding and as food and fodder, one finds that the current needs of the Soviet Union total 160 million tons annually.

This potential demand exceeds domestic production. According to official Soviet statistics, grain output reached a record level of 141.2 million tons in 1958 but dropped to 124.8 million tons in 1959.[2] The wheat output was estimated at 76.6 million tons (2,815 million bushels) in 1958 and 68.6 million tons (2,521 million bushels) in 1959. The potential demand for grains, as indicated in Khrushchov's statement, exceeded output by 19 million tons in 1958 and 35 million tons in 1959. The Soviet Union might then be considered as a potential importer of a large volume of grains.

The 1965 target for grain production has been set at 180 million tons. The current seven-year plan also calls for the production of between 76 million and 84 million tons (2,769-3,083 million bushels) of wheat by 1965. To reach these targets the Soviet farmers will have to grow about 60 per cent more grain than the average annual output in the 1954-1958 period; the increase in total output will be achieved mainly through an increase in yields.[3] According to the plan, "the collective and state farms must obtain about three to four centners more from one hectare of grain sown" (270-360 pounds an acre). In other words, the average yield is to be increased from about 980 pounds an acre in 1958 to 1,250-1,370 pounds an acre in 1965.

The planned rate of growth in yields for the current seven years, however, looks a little ambitious when compared with previous results; for instance, between the 1910-14 and 1949-53 periods the average grain yield increased by ten per cent. Some improvement in grain yields and total output over 1958 levels is probable but not to the extent envisaged by the Soviet government. If this is so, then the difference between needs and output will probably exceed 20 million tons of grains in 1965.

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[1] Jaska, E., *Grain Policies in the U.S.S.R.* In *Agriculture Abroad*. Economics Division, Canada Department of Agriculture. Vol. XV, No. 3. June 1960. pp. 30-40.

[2] *Vestnik Statistiki*, No. 4, Moscow, 1960.

[3] In its resolution, adopted on December 25, 1959, the Central Committee of the Communist Party of the U.S.S.R. modified the plan and declared that "grain crop production is to be expanded by plowing up new lands and revising the structure of sown areas, so as to replace the low-yielding crops by higher-yielding crops, by expanding the sowing of corn". In *Rahva Haal*. Tallinn, December 27, 1959.

Our calculations also indicate that exports of wheat and other grains from the U.S.S.R., in recent years, did not come from surplus stocks; the grain exported could very well have been used for livestock production if "political considerations" had not diverted that grain to export channels. On the other hand, if the Soviet Union wants to achieve its goals, for increases in livestock output, it will have to import large quantities of grains during the next five years. If she does so, we may then assume that its exports of wheat to Western Europe will not increase very much.

According to estimates made by the United States Department of Agriculture, a supply of 13 million metric tons of wheat and rye, or close to 480 million bushels, could become available for export, stockpiling, and animal feeding in the U.S.S.R. in 1965. A small quantity might also be needed for industrial purposes, principally for the production of alcohol. As indicated above, however, the whole supply and even an amount greatly exceeding that supply could easily be used as feed in livestock production. According to Volin, "it would perhaps be more realistic to assume that half of it would be used as animal feed and about 2.5 million metric tons exported to the Satellites. This would leave four million tons (equivalent to about 150 million bushels) available for export to Free World markets".[1]

Meat.—Since 1953 the Soviet meat output has increased steadily, under the stimulus of the government drive to surpass the United States; it reached a record of 19.0 billion pounds in 1959. This is still only half of the total U.S. meat production.

At the present time the amount of Soviet meat entering world markets is not particularly significant, and the value of Soviet meat exports in relation to total agricultural exports has been relatively small. In 1958, it was only 4 per cent, or $17.2 million, of the $429 million total for agricultural exports. The value of meat imports was higher, comprising 18 per cent, or $80.7 million, of the $435 million total agricultural import in that year. Of the total Soviet foreign trade, agricultural commodities have averaged about 12 per cent of the value in recent years.[2]

The planned output of meats for 1965 totals 35.2 million pounds. To achieve this goal it will be necessary for the Soviets, during the next five years, to double the average annual growth in meat output of the past six years. During 1954-59 the average annual increase was seven per cent but during 1961-65 at least 14 per cent will be needed to produce the planned 35.2 billion pounds. Considering the capabilities and limitations of the Soviet livestock and meat industry, the production goal seems to be distant from the expected output. However, the Central Committee of the Communist Party feels confident "that the seven year plan of 35.2 million pounds of meat will be met ahead of time, by 1963". In addition, the Committee states: "we must have 20 million to 21 million tons (44-46 million pounds) of meat if we are to catch up with the U.S.A. in per caput meat production.[3]

At the present level of efficiency in Soviet livestock and meat production, one may doubt that Soviet meat products will enter the world markets on a large scale, at least for some years. However, Soviet foreign trade in meats should also be considered in a political context, especially since Khrushchov himself relates the country's meat production to competition with the United States and capitalism. There are some indications, however, that most of the planned production is intended for the improvement of domestic meat consumption.

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[1] Volin, Lazar. *Soviet grain outlook.* In *Foreign Agriculture.* United States Department of Agriculture. December 1959. pp. 15-16.

[2] Olson, E. T. *Meat Production in the Soviet Union*, U.S.D.A. Foreign Agriculture Service, F.A.S. 83. June 1960.

[3] *Agriculture Abroad.* Vol. XV, No. 2, April 1960

Dairy Products.—The Soviet Union has greatly expanded its milk production over the past six years; in 1959 it totaled 136.7 billion pounds. Two related factors were mainly responsible for this upward trend. First, an improvement took place in feed supply and management, which had long been weak elements in Soviet animal husbandry and, second, the number of cows increased by 40 per cent between January 1, 1953, and January 1, 1960.

In the utilization of milk for manufacturing purposes, the major increase was in butter production; much less attention is being given to the production of cheese and of dry, condensed and evaporated milk.[1] Factory and farm production of butter in 1959 was estimated at 1.8 billion pounds, about double the volume in 1950. Slightly more than 80 per cent of the total output consists of factory production. With its present output the U.S.S.R. now ranks first among butter-producing countries, and in 1957-59 exceeded the United States output. The target for butter output in 1965 is now about 2.5 billion pounds, a 37 per cent increase over 1959.

The Soviet Union emerged as a net exporter of butter in 1956 and 1957; shipments in 1957 exceeded imports by about 90 million pounds. In 1958 the Soviet trade in butter was much smaller than in 1957, and the U.S.S.R. became a net importer. However, in 1959 exports of butter reached a record level of 177 million pounds, placing the U.S.S.R. into second place among European exporters.[2] The larger part of the butter exports went to Eastern Germany.

In the same year imports of butter were estimated at 29.9 million pounds; 13 million pounds or about 50 per cent of total butter imports were supplied by Finland and 7.9 million pounds by Poland. A net importer of cheese, the Soviet Union imported 6.8 million pounds in 1959 but exported only 2.2 million pounds.

To forecast the future of the Soviet butter trade, one should also consider the country's production and consumption of all kinds of food fats. FAO estimates place the apparent consumption of "visible" food fats in the U.S.S.R. at about 31 pounds per caput. This figure represents a sharp increase from prewar years but is still well below the current levels for North America (62 pounds) and Western Europe (51 pounds). Half of the per caput consumption of the Soviet Union consists of vegetable oils, the remainder being mainly slaughter fats and butter. The targets of the present seven-year plan (1959-1965) call for a 61 per cent increase in the industrial production of vegetable oils over 1958, mainly through the expansion of the sunflower seed and cotton seed crops. As already indicated, meat production (including fats) should reach 44-46 million pounds and the target for butter is 2.5 billion pounds. The fish catch is planned at 60 per cent over 1958, with, as one probable consequence, an increase in fish body oil output. Assuming that all these objectives will be largely achieved, one must also assume that supplies of food fats and oils for human consumption will register a further sharp increase in the next few years.[3] However, this would probably still not be sufficient to arrive at present per caput consumption levels in either the United States or Western Europe and butter "surplus", if there is any, could be consumed in the domestic market.

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[1] Volin, Lazar. *Milk Production in the Soviet Union: Recent Developments.* USDA. FAS-M-58. May 1959.

[2] Data published by the Economic Commission for Europe.

[3] *Food fats and oils situation in the U.S.S.R. FAO, Monthly Bulletin of Agricultural Economics and Statistics.* Vol. VIII, April 1959.

PUBLICATION OF THE ECONOMICS DIVISION

Credit Unions in Canada, 1959. Heighton, V.A., Ottawa, September 1960. pp. 18.

A statistical report on credit union activities in Canada in 1959.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

In Canada: The Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal, 34.

Monthly Bulletin of Agricultural Economics and Statistics. Vol. IX, No. 9, September 1960. Food and Agriculture Organization, Viale delle Terme di Caracalla, Rome, Italy.

This issue of the Bulletin contains a seven-page article on The Role of Marketing in the Growth of Agricultural Production and Trade in Less Developed Countries; special features dealing with Coffe Taxes and Consumption in Importing Countries and The United States Agricultural Surplus Disposal Program: Recent Developments in Operations under Public Law 480; commodity notes on rice and linseed; linseed oil; and statistical tables on production, trade and prices for some agricultural products.

An Inquiry into the Problems of Agricultural Price Stabilization and Support Policies. Food and Agriculture Organization, Rome Italy, 1960. pp. XI+234.

This publication is organized into four parts. Part I is a commentary on the report of the FAO Expert Working Group on Agricultural Support Measures.

Part II consists of the Report of the Expert Working Party on Agricultural Support Measures (December 1956). The chapter on Methods of Supporting Agricultural Prices and Incomes describes the support measures which involve and those which do not involve price guarantees; agricultural price guarantees; measures, other than price regulations that tend to raise farm incomes; and the sources of funds and of increased income under agricultural supports.

The chapter titled *Appraisal of Agricultural Support Measures* is concerned with the impact of those measures on the producer and the consumer and their effects on the surplus problem and on international trade.

Part III gives the readers some commentaries on the report of the FAO Expert Panel on Agricultural Price Stabilization and Support Policies.

Part IV includes the Report of the Export Panel on Agricultural Price Stabilization and Support Policies (April 1959). Members of the panel review the objectives, discuss the implementation methods and appraise the stabilization and support policies, appraise the effects of both price and "non-price" measures of agricultural support on farmers and farm production, discuss the impact of these measures on consumption, their effects on international trade, and consider the advantages and disadvantages of different methods of implementing agricultural price stabilization and support policies.

An Annual Review of World Production Consumption and Trade of Fertilizers (1959). Food and Agriculture Organization, Rome, Italy, 1960. pp. VIII+140.

A record and an analysis of "the production, consumption and trade of fertilizers in the world as a whole and in the different continents and countries."

The State of Food and Agriculture, 1960 FAO, Rome. 1960. pp. VIII+182.

In the foreword to this report on the state of food and agriculture Dr. B. R. Sen, Director-General of FAO states that

> "Although world agricultural production increased less in 1959/60 than in 1958/59 when the expansion was unusually large, the rise of about 2 per cent in 1959/60 remained somewhat ahead of the annual rate of growth of the world's population. International trade in agricultural products recovered in 1959 and early 1960 from the setback resulting from the economic recession of 1957-58 in the industrialized countries. This recovery was only partial, however, for although the volume of trade reached a new high level, prices of agricultural products as a whole continued to decline so that the value of world trade remained appreciably less than in 1957."

In its *World review and outlook* the report itself deals chiefly with agricultural production, changes in stocks, economic activity and the demand for agricultural products, food supplies and consumption, international trade in agricultural products, farm prices and incomes, consumer prices and sales, agricultural policies and development plans, and the situation and outlook for various agricultural commodities.

In a chapter on *Programming for agricultural development* the report examines some of the preconditions for agricultural progress, from the standpoint of governments. It gives special attention to the scope, objectives and special problems of planning for agricultural development, the establishment of agricultural targets, and the choice of means to implement production targets.

United Nations Wheat Conference, 1958-59. Summary of Proceedings 1960. pp. V+42.

A report summarizing the proceedings of the U.N. Wheat Conference which met in Geneva (first session, October 28 to November 6, 1958), London (meetings of the Preparatory and Technical Committees, November 11 to 21, 1958), and Geneva (second session, January 26 to Macrh 10, 1959). It also contains summary records of the five plenary meetings, the text of the resolution adopted at the final plenary meeting, and the text of the 1959 International Wheat Agreement.

OTHER PUBLICATIONS

Trade and Commerce at your Service. Department of Trade and Commerce, Ottawa. November 1960. p. 32.

A booklet which outlines the rapid growth of Canada's foreign trade, describes the organization of the Department of Trade and Commerce and reviews the many services made available to the Canadian businessman by that Department. It also includes a Head Office Directory and a list of Trade Commissioner posts abroad.

Beef Production Case Studies. Tansey, A. W. Report 145 G. University of Durham, Department of Agricultural Economics, King's College, Newcastle Upon Tyne, England. October 1960. pp. 19. Price 2/-.

A report on the results of a few case studies of different practices in beef production, for the winter of 1958-59.

Sugar Beet in the South West, 1959. Loadman, Margaret and J. E. Harrison. Report No. 119, Department of Economics (Agricultural Economics), University of Bristol, Devon, England. September 1960. pp. 59. Price: 3/6.

An economic study of sugar beet crops on 48 farms in Cornwall, Devon and Dorset. The report deals chiefly with returns, profitability factors, seasonal and operational labor distribution, and prospects for sugar beets in the South West.

In the Foreword, S. T. Morris, Provincial Agricultural Economist tells the reader that,

> During the past twenty years British farmers have been increasing their share of the home sugar market. This rose from 18% in the period 1934 to 1938 to 26% in 1959. The total sugar beet acreage has remained fairly constant during this period but yields of sugar beet roots per acre are at least twenty five per cent higher than those obtained in the years immediately prior to the war. The world market in sugar is complicated by various agreements, and imports to this country from the Commonwealth are fixed at a price well above the "free" world price. This should not be forgotten when congratulating farmers for their willingness to produce increasing quantities of beet without receiving any subsidy. The price realised by the British Sugar Corporation for sugar equals that paid for imported raw sugar.

Commercial Egg Production. Weeks, W. G. R. Report 142 G. University of Durham, Department of Agricultural Economics, King's College, Newcastle Upon Tyne, England. September 1960. pp. 17. Price: 2/6.

A study of the economics of egg production in the North of England, based on a sample of 18 hybrid and three non-hybrid battery flocks and 12 hybrid and 19 non-hybrid deep litter flocks, for the year 1958-59.

Co-operatives in Ontario—their development and current position. Perkins, B. B. Department of Agricultural Economics, Ontario Agricultural College, Guelph, Ontario. pp. VII + 137.

In the Introduction the writer reminds us that "In Ontario, the extent and nature of co-operation has altered radically since its introduction in the late nineteenth century, and its position to-day is characterized by considerable variation in the type and administration of co-operative enterprises." In this study, he provides a "concise account of the history and current position of co-operation" in Ontario.

His well-documented "account" deals, among other things, with some aspects of co-operation in Canada and abroad, supply and marketing co-operatives, co-operative insurance and credit, medical co-operatives, the educational aspects of co-operation and the purposes of legislation for co-operatives. His last chapter, "Summary and Commentary, discusses the Rochdale principles of co-operation and their application in the province of Ontario."

Sample Design in Business Research. Deming, W. Edwards. John Wiley & Sons, Inc., New York. London. 1960. pp. XX + 517.

A textbook "written from the point of view of the theoretical statistician in industry."

Part I is concerned with the standards of statistical practice. The author, imbued with the desire "to enhance the usefulness of statistical methods," deals with responsiblities in the planning of a survey, makes some remarks on the theory of sampling, traces the frame and indicates the elements of a sampling plan, gives some operational definitions, and deals with uncertainties not attributable to sampling.

Part II deals with replicated sampling designs. Deming describes some simple replicated designs, then gives examples from a survey of business establishments, sampling accounts, an evaluation of inventory of materials, a replicated survey of a small urban area, and ends up this part of his book with chapters on General Theory and Procedure for Replicated Sampling of a Large Area, Field Procedure for the Creation of Segments and for the Selection of People Within Families, A Statistical Aid to Supervision, Sampling New Material, and Stratified Sampling.

Part III is an incursion into the field of theoretical concepts. Deming discusses, at length, the evaluation of expected value and of bias, the theory of variances, the Poisson series and the square-root transformation, the optimum number of segments per block, the theory for the formation of strata, and the choice of zoning interval and number of subsamples.

Methods of Regional Analysis—An Introduction to Regional Aanalysis.—Isard, Walter. Published jointly by The Technology Press of The Massachusetts Institute of Technology and John Wiley & Sons, Inc., New York. London. 1960. pp. XXIX + 784.

This book is a sequel to Location and Space Economy: A General Theory Relating to Industrial Location, Market Area, Land Use, Trade and Urban Structure. In that book Isard tried "to improve the spatial and regional frameworks of the social science disciplines, especially economics, through the development of a more adequate general theory of location and space-economy".

Recognizing that a general theory is of little use in grappling with the harsh problems of reality, if not supplemented by operational techniques of regional analysis, he is now supplying his readers with a detailed study of "techniques which yield estimates of basic magnitudes for the space-economy and for each region of a system.

The first chapters deal with population numbers and projection, migration estimates, regional income and regional social accounts. Chapter 5 delves into the problem of interregional commodity and money flows and balance of payments and Chapter 6 and 7 pursue the probing into the bonds between the internal structure of a region and an interregional system with an analysis of regional cycles and of regional and interregional multiplier effects, and a review of industrial location analysis and related measures.

Chapter 8 is what the author considers to be his "first major stab at general interdependence", with an investigation of the interregional input-output approach. In chapters 9 and 10 he continues his studies of general interdependence with an examination of the industrial complex analysis and of interregional linear programming. In chapter 11, where he looks at the region as a mass, he evaluates an array of gravity, potential and spatial interaction models.

In chapter 12 Isard brings together the many pieces of a large puzzle with his Channels of Synthesis. Each of his many syntheses "purports to fuse into a superior framework for analysis the stronger elements of the several techniques discussed in the previous chapters. His confronting of the problem of synthesis resolves itself into an observation of the "diverse phases of the spatial organization of society in a manner that points up the possibilities of their integration conceptually and, where possible, quantitatively and operationally."

The Economic Background to Agricultural Policy. Whetham, Edith H. The University Press, Cambridge, England. Published in Canada by The Macmillan Company of Canada Limited, Toronto. 1960 pp. XII + 147.

The writer classifies the chief objectives of agricultural policy as follows: a) the maximization of the national output, b) the maintenance of food supplies, c) the reduction of variability in agricultural incomes, and d) the redistribution of personal incomes. She then proceeds to demonstrate the way in which economic analysis may help in the formulation of policies best designed to meet these objectives.

She considers the part which agriculture plays in the economic development of a nation, discusses the effect of demand and supply on market prices, the various marketing processes, the supply of agricultural produce, land, capital, labor and managers and concludes her essay with notes on the conflicting nature of differing objectives, the need to modify policies in accordance with new development trends, and what she calls the "mechanisms of policy," namely, laisser-faire, control through public finance, import controls and control of commodity prices and farm wages.

The Economics of Irrigation in Dry Climates. Clark, Colin. Institute for Research in Agricultural Economics, University of Oxford, England. 1960. pp. 31.

Clark devotes most of the first eight pages of his booklet to crop water requirements and then enters into a discussion of gross and net returns, from irrigation, for various crops and pastures.

He notes that gross marginal returns to water use are much higher in the United States than elsewhere and that "it is in the poorer countries that the need for providing additional draught animals, and their fodder, often makes the net return so low in comparison with the gross". To illustrate his thought, he summarizes a great deal of information in a table showing "Return to metric tons per hectare" on unirrigated and irrigated land, for various crops, in ten different countries.

He then goes on to examine available information on capital costs of irrigating land through dams and channels, noting the "striking similarity between the real annual costs of supplying one hectare metre of water in different parts of the world" and the great variations in storage costs per unit of water stored. He also points out that irrigation from wells and small dams, a widespread method of irrigation nowadays, capital costs are much lower but maintenance and operation costs are higher per unit of water delivered.

Clark ends his discussion with an examination of available data on the extent of water resources and "the extent of land which is physically capable of being irrigated now, to yield a return which is at present uneconomic, but which might be economic at some date in the future, if world prices of farm products are higher, relative to the prices of industrial goods and services, than they are now." The Canadian reader may well wonder, here, why the writer did not have a look at Canada's situation and probable developments.

CANADA COURIER

Canada's International Trade Newspaper

Canada now has an international trade newspaper. The first issue of Canada Courier was "unveiled" during the November-December Export Trade Promotion Conference in Ottawa.

Published by the Department of Trade and Commerce the eight-page tabloid will promote the sales of our products and services in every market in the world. It will supply foreign buisnessmen with information on our new plants products and processes, our export sales, and trade developments and trends; it will also feature articles on Canadian producers and exporters and on the Canadian scene.

Initially, the newspaper will be published quarterly, in English. As soon as feasible, however, it will be issued as a monthly publication and regional and foreign language editions will also become available.

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THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION
A. H. TURNER, Director

APRIL 1961 **Vol. XXXI No. 2**

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G. P. BOUCHER, Editor

Published by Authority of the Honourable Alvin Hamilton
Minister of Agriculture

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ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production[e]
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
		1935-39=100						1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	221.2	170.7	271.6	245.2	269.5	219.1	126.5	121.1	165.4
1960	230.6	219.8	175.1	264.4	239.4	274.7	222.7	128.0	122.2	....
1960										
Jan	230.5	218.5	179.4	257 7	235.7	268.7	223.5	127.5	121.6	173.5
Feb	230.0	215.8	179.6	252.0	232.5	....	....	127.2	120.8	170.1
Mar	229.6	217.4	182.6	252.2	232.7	....	....	126.9	119.4	171.9
April	231.3	222.2	188.1	256.2	239.7	279.9	223.4	127.5	120.9	166.6
May	231.3	223.8	189.9	257.8	241.3			127.4	120.2	167·8
June	231.9	228.9	192.8	265.0	245.4	....	....	127.6	120.8	167.6
July	232.2	225.7	181.2	270.1	247.1	....	....	127.5	120.5	164.3
Aug.	230.2	216.3	160 9	271.7	236.3	281.6	222.9	127.9	121.7	165.6
Sept	230.4	217.2	160.7	273.6	239.8			128.4	123.3	167.5
Oct	230.3	215.7	161 9	269.4	240.1	....	....	129.4	125.8	167.3
Nov	229.7	216 5	161.8	271.2	239.8	....	....	129.6	125.5	166.7
Dec	230.1	219.6	162.7	276.5	242.4	....	....	129.6	125.3	166.0
1961										
Jan	231.3	221.1	163 7	278.5	243.4	271.8	221.9	129.2	124.4	....
Feb	231.6	220.5	163.3	277.7	244.2	....	....	128.9	123.4	....
Mar	231.3	216.2	162.4	269.9	....	....	....	....	....	....

Note:–See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

[a] Prices at terminal markets.

[b] Indexes subsequent to July 1959 are subject to revision.

[c] Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.
1960 indexes are subject to revision, since tax and interest rate figures are preliminary.

[d] Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

[e] For a detailed description of concepts, sources and methods see D.B.S. Reference Paper (61-502) Revised *Index of Industrial Production, 1935-57.*

THE ECONOMIC SITUATION

In an address to the Canadian Club of Montreal, on March 6, the Deputy Minister of Trade and Commerce said that ". . . in 1961, we face a most baffling paradox. At a time when our national production and income, our exports, our standard of living, our personal income and our employment are at or near record levels—in other words, while we are enjoying general prosperity, we have an unemployment problem and distress in a number of our secondary industries. We have come to the full realization that significant proportions of our manufacturing and natural resource industries are owned and controlled abroad. More than that, our balance of payments deficit, inflated by huge sums to service foreign investment in Canada, has been climbing steadily.

The solutions to these problems and the attainment of our future national economic security lies in meeting the challenge of the Sixties.

That challenge is complex and many-sided. Our ability to adjust to rapidly changing world economic conditions as they occur is the hinge on which the door to our future prosperity swings."

Capital Movements.—Capital movements for direct investment, portfolio stocks and bonds, and official loans and long-term investments, totaled about $875 million in 1960, enough to finance about 69 per cent of the current account deficit; in 1959 they totaled $1,088 million, enough to finance 73 per cent of the deficit. About 85 per cent of the net capital inflow in long-term forms came from the United States, compared with 84 per cent in 1959.

Balance of Payments.—Canada's deficit in current transactions in goods and services with other countries declined to $1,270 million in 1960 from $1,494 million in 1959. Inflows for direct investment in foreign-controlled enterprises rose to new heights but inflows of portfolio capital declined sharply.

By the end of 1960 Canadian liabilities of all kinds to other countries totaled $26.1 billion and exceeded Canadian assets abroad by $17 billion, leaving net international liabilities of $15.5 billion at the end of 1959. The chief elements in the liabilities picture are the foreign long-term investments in Canada which totaled $22.3 billion in 1960 and $20.8 billion in 1959. Direct investments in foreign-controlled enterprises amounted to $12.8 billion and represented more than half the total of foreign long-term investments in Canada.

The rise in the value of Canadian exports was the most important single change in the current account in 1960. Receipts from these exports stemmed entirely from general rises of 20 per cent in Canadian exports to overseas countries and a contraction of exports to the United States.

Industrial Production.—Canada's seasonally adjusted index of industrial production (1949=100) rose to 166.3 in January 1961 from 165.8 in December 1960 but declined from 173.5 in January 1960.

Labor Income.—Canada's paid workers received about $1,529 million in salaries, wages and supplementary labor income in December 1960, compared with $1,574 million in November and $1,483 million in December 1959. Labor income in 1960 was estimated at $18,514 million compared with $17,761 million in 1959.

Consumer Prices.—Canada's consumer price index (1949=100) declined to 128.9 in February from 129.2 in January, as a result of an 0.8 per cent drop in the food index.

Lower prices for citrus fruits, fresh tomatoes, eggs, lettuce and beef outweighed higher prices for other meats, apples and some fresh vegetables and the food index dropped to 123.4 from 124.4.

Farm Income.—Net income of farm operators from farming operations totaled $1.4 billion in 1960, a rise of 12 per cent from the $1.2 billion realized in 1959 and of 6.5 per cent from the 1955-59 five-year average of $1.3 billion. Gross farm income, which includes farm cash income, income in kind and inventory changes totaled $3.2 billion which was five per cent more than the $3.1 billion realized in 1959.

Farm Prices.—Canada's index of farm prices of agricultural products (1935-39=100) rose to 243.6 in January 1961 from 242.4 in December 1960. This gain is largely attributable to higher livestock prices that more than offset lower poultry prices.

Dairy Products.—Milk output in January 1961 totaled about 1,090 million pounds, which is about 2.8 per cent above the January 1960 output. The output for the year 1960 totaled 18,433.2 million pounds and that for 1959 amounted to 18,186.7 million pounds.

Sales of fluid milk and cream, the latter expressed in terms of milk totaled 478,970,000 pounds in January 1961, a rise of one per cent from January 1960. Production of creamery butter and skim milk powder was larger in February and in the January-February period of 1961 than in the corresponding periods of 1960 but the output of cheddar cheese, ice cream mix and evaporated whole milk was smaller.

The February output, in millions and with figures for 1960 in brackets, was as follows: creamery butter, 12.7 pounds (11.8); cheddar cheese, 2.9 pounds (3.0); ice cream mix, 1.0 gallons (1.1); evaporated whole milk, 15.1 pounds (18.8); and skim milk powder, 7.3 pounds (6.6).

Output in the January-February period was: creamery butter, 26.6 pounds (24.3); cheddar cheese, 6.2 pounds (6.8); ice-cream mix 2.0 gallons (2.1); evaporated whole milk, 31.5 pounds (36.7); and skim milk powder, 15.6 pounds (14.1).

The output of process cheese totaled 5.2 million pounds in February 1961, compared with 4.0 million in January and 5.3 million in February 1960.

Wheat.—Wheat supplies remaining on or about February 1, 1961 in the four major wheat exporting countries for export and carryover at the end of their respective crop years totaled 2,704.2 million bushels, a seven per cent increase from the corresponding total of 2,528.1 million bushels a year previously. February 1 stocks, in million bushels and with figures for 1960 in brackets, were as follows: United States, 1,711.4 (1,571.3); Canada, 725.1 (664.8); Argentina, 45.8 (131.0); and Australia, 221.9 (161.0).

Poultry and Eggs.—Poultry numbers on Canadian farms declined from 50,960,000 at December 1, 1959 to about 50,354,000 at December 1, 1960. Totals were smaller for hens and chickens, turkeys, geese and ducks.

The egg output totaled 40,307,000 dozen in January 1961, compared with 39,538,000 in January 1960. The average number of layers declined to 28,988,000 from 29,442,000 and the rate of lay rose to 1,679 eggs per 100 layers from 1,624.

CORRIGENDUM

On page 12 of the February issue, add **Rice**, as a sub-heading to the paragraph following the two-line paragraph on **Wine**.

AGRICULTURE IN THE NATIONAL ECONOMY

C. K. VARKARIS AND G. P. BOUCHER

This brief article may not do very much more than draw attention to the need to assess agriculture's ever-changing contribution to our national economy. The emphasis here is on the "ever-changing" aspect of this contribution. The total output of our agriculture changes continuously but what may be even more important is the rapid increase in output per worker, per acre, or per other unit of production.

Our agriculture is not restricted to the farm front, to the aggregate of individual farms; it also includes the whole range of our food-processing industries and agencies distributing the products of our farms.

In our age of rapid industrial expansion many observers of the economic scene are ready to contest the perennial saying that "agriculture is the backbone of a nation's economy." Indeed, slogans or catchwords may trend to partake as much of a little falsehood as of a high degree of imperiousness. Obviously, however, there is need to adjust one's glasses and take a fresh look at the situation.

In this, the first of a series of articles on agriculture in our economy, we shall content ourselves with a few and very well-known measures of agriculture's contribution to our national economy. We shall, perforce, confine our review to activities on the farm front, well knowing that our task shall be completed only when we have had a good look at the various facets of these modern developments which some authors have grouped together under the label, "agribusiness."[1]

Farm Population.—Canada's population totaled 16.1 million in 1956. Of this total 5.4 million or 33.4 per cent lived in rural areas and 2.6 million or 16.4 per cent lived on farms in those rural areas. As is the case with other countries where industrialization is expanding rapidly the number of people living on farms is steadily declining. Only as far back as the middle 1940s, about 25 per cent of our people lived on farms.

Agricultural Land.—The very size of the farm land area has an influence of its own on the structure of the over-all economy. Suffice it to note the importance of distance, the need to provide transportation facilities for the gathering of many production inputs and the marketing of the outputs.

Agriculture being an extensive enterprise, it uses more land than any other economic enterprise in Canada, including forestry. The total farm land area covers about 173.9 million acres, including farm woodlots, whereas the total occupied productive forest land area, excluding farm woodlots, covers about 156.7 million acres. Of the 173.9 million acres in farm land 100.3 million only are improved, 62.9 million produce crops, 24.6 million are in summerfallow and 10.1 million in pasture (Table 1).

Number and Size of Farms.—As a result of the increase in the acreage of individual farms, to take advantage of opportunities inherent in technical innovations and in a larger size of business, the number of farms has declined steadily since 1931 in the Atlantic, Central, and Prairie regions of Canada. In British Columbia, the decline was not so pronounced nor so steady. The number of occupied farms there declined from 1931 to 1941 but was even slightly higher in 1951 than in 1931; it declined again, however, from 1951 to 1956. For Canada as a whole the number of occupied farms dropped from 728,664 in 1931 to 575,015 in 1956. (Table 2).

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[1] Davis, John H. and Ray A. Goldberg. *A Concept of Agribusiness.* Division of Research, Graduate School of Business Administration, Harvard University, Boston. 1957.

Table 1.—Land Area and Agricultural Land Use, Canada, 1901-56

Census year[a]	Total land area	Total farm area	Improved farmland				Unimproved land		
			Total[b]	Crops	Summer fallow	Pasture	Total	Wood land	Other land
	— millions of acres —								
1901	858.1	63.4	30.2	20.2	—	—	33.3	16.8	16.5
1911	963.4	109.0	48.7	35.9	2.5	—	60.2	17.5	42.8
1921	1,353.7	140.9	70.8	50.0	12.0	7.6	70.1	23.8	46.3
1931	1,246.8	163.1	85.7	58.3	17.0	8.0	77.4	26.6	50.7
1941	1,246.8	173.6	91.6	56.3	23.5	8.5	81.9	22.3	59.7
1951	2,272.0	174.0	96.9	62.2	22.0	10.0	77.2	22.8	54.5
1956	2,272.0	173.9	100.3	62.9	24.6	10.1	73.6	19.5	54.1

[a] Data for the Yukon and the Northwest Territories for 1951 and 1956 only.

[b] Includes such land as barnyards, lanes, and farm roads.

SOURCE:—(i) *Handbook of Agricultural Statistics*, August 1955. Reference Paper No. 25—Part III, *Trends in Canadian Agriculture*. Economics Division, Department of Agriculture, and Agriculture Division, Dominion Bureau of Statistics.

(ii) Census of Canada.

Table 2.—Occupied Farms, Canada and Regions, 1901-56

Year	Canada	Atlantic region	Central region	Prairie region	British Columbia	Yukon and Northwest Territories
	— number —					
1901	511,073	105,232	344,164	55,176	6,501	—
1911	682,329	104,359	361,809	199,203	16,958	—
1921	711,090	97,788	335,672	255,657	21,973	—
1931	728,664	86,334	328,131	288,079	26,079	41
1941[a]	677,500	69,100	312,100	274,500	21,800	—
1951	623,091	63,709	284,256	248,716	26,406	4
1956	575,015	55,010	263,219	232,016	24,748	22

[a] Adjusted according to the definition of a farm in the 1951 and 1956 census.

Table 3.—Average Size of Farm, Canada and Regions, 1901-56

Year	Canada	Atlantic region	Central region	Prairie region	British Columbia	Yukon and Northwest Territories
	— acres —					
1901	124	102	104	279	230	—
1911	160	105	104	289	150	—
1921	198	104	119	344	130	—
1931	224	112	133	381	136	127
1941[a]	256	130	130	438	185	—
1951	279	123	132	498	178	108
1956	302	125	136	546	183	204

[a] Adjusted according to the definition of a farm in the 1951 and 1956 census.

The average size of farm for Canada as a whole has increased steadily since 1931, rising from 224 in 1931 to 302 acres per farm in 1956. (Table 3).

Farm Values.—Farm values more than doubled during the 1935-59 period. The capital invested in farm businesses rose from $4.5 billion in 1935 to about $11.4 billion in 1959, which represents an increase of 253.3 per cent. (Table 4). In 1935, $3.4 billion were invested in land and buildings, $0.5 billion in livestock and the same amount in farm machinery; the corresponding figures for 1959 are $7.2 billion, $2.0 billion, and $2.2 billion. The average total investment per farm more than doubled, rising from $6,386 in 1935 to $20,783 in 1959, which represents an average annual increase of nine per cent.[1]

Table 4.—Value of Farm Capital, Canada, 1935-59

Year	Land and buildings	Machinery	Livestock	Total
	— million dollars —			
1935	3,449	534	541	4,524
1936	3,292	524	574	4,390
1937	3,253	527	604	4,384
1938	3,083	544	587	4,214
1939	3,107	547	644	4,298
1940	2,963	568	682	4,213
1941	3,030	596	621	4,247
1942	3,238	660	783	4,681
1943	3,454	722	1,098	5,274
1944	3,649	758	1,082	5,489
1945	3,711	827	1,042	5,580
1946	3,897	905	1,075	5,877
1947	4,212	1,027	1,149	6,388
1948	4,665	1,195	1,245	7,105
1949	4,717	1,416	1,371	7,504
1950	5,023	1,681	1,468	8,172
1951	5,513	1,932	2,014	9,459
1952	5,622	2,038	1,791	9,451
1953	6,034	2,152	1,557	9,743
1954	5,984	2,241	1,424	9,649
1955	6,236	2,210	1,463	9,909
1956	6,456	2,193	1,423	10,072
1957	6,528	2,198	1,517	10,243
1958	6,869	2,178	1,878	10,925
1959	7,176	2,189	1,986	11,351

SOURCE:—(i) Unpublished Data, Farm Finance Section, Agriculture Division, Dominion Bureau of Statistics.
(ii) *Quarterly Bulletin of Agricultural Statistics*, Dominion Bureau of Statistics.

Expenditures.—The increase in farm values was paralleled by a no less striking increase in expenditures. Capital expenditures, for construction, machinery and equipment and repair expenditures, also for construction, machinery and equipment, rose from $71.5 million in 1935 to $649 million in 1958, after having reached a peak of $708.1 million in 1953 (Table 5). Purchases of and repairs to machinery and equipment accounted for 79.2 per cent of the total in 1935 and 73.3 in 1958; for the 1935-58 period as a whole they represented 77.1 per cent of the total.

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[1] For more details on the components of farm capital, see Varkaris C. *Some Implications of Farm Capital in Canadian Agriculture* from 1935 to 1958 in *The Economic Annalist*, April 1960.

The above figures on expenditures for machinery and equipment include money spent for the purchase and repair of old or used as well as new equipment and machinery. The values given, consequently, are retail and not wholesale values.

Data on sales of new implements and machinery, at wholesale values, however, may be better indicators of additions to the production capital of our farms. These sales rose from only about $19.3 million in 1936 to $52.1 million in 1941, $235.6 million in 1951 and reached a peak of $250.3 million in 1952. They then followed a somewhat erratic downward trend and were valued at about $172 million in 1958 (Table 6).

Sales of other farm supplies have been reaching new high levels in recent years. Sales of fertilizers, for example, rose from 212,479 tons in 1935 to 575,107 tons in 1945, to a peak of 819,803 in 1953 and new peaks of 870,539 in 1958 and 908,214 in 1959 (Table 7).

Sales of pesticides rose from only $5.4 million in 1947 to $12.6 million in 1951 and reached a peak of $20.2 million in 1956; they were valued at about $19 million in 1959 (Table 8).

Farmers are also heavy users of electrical power. Statistics on farm service furnished by central electric stations indicate that the number of farm customers and the number of kilowatt-hours supplied to them has been increasing steadily since 1944. From 116,609 in 1944 the number of customers rose to 456,248 in

Table 5.—Capital and Repair Expenditures on Canadian Farms, 1935-58

Year	Capital expenditures			Repair expenditures			Capital and repair expenditures
	Construction	Machinery and equipment	Total	Construction	Machinery and equipment	Total	Grand total
	1	2	(1 + 2) 3	4	5	(4 + 5) 6	(3 + 6) 7
	— million dollars —						
1935	5.3	34.4	39.7	9.6	22.2	31.8	71.5
1936	7.1	44.2	51.3	10.3	25.7	36.0	87.3
1937	9.1	62.9	72.0	10.1	32.7	42.8	114.8
1938	8.5	67.4	75.9	10.7	35.7	46.4	122.3
1939	10.1	63.0	73.1	10.8	35.4	46.2	119.3
1940	11.0	82.6	93.6	14.2	41.3	55.5	149.1
1941	15.3	90.0	105.3	19.9	44.7	64.6	169.9
1942	13.7	71.0	84.7	26.5	46.3	72.8	157.5
1943	14.0	39.3	53.3	34.1	46.2	80.3	133.6
1944	20.3	72.6	92.9	39.1	48.7	87.8	180.7
1945	25.6	89.8	115.4	37.4	52.1	89.5	204.9
1946	39.1	132.8	171.9	36.1	60.0	96.1	268.0
1947	45.4	213.2	258.6	39.6	70.9	110.5	369.1
1948	56.9	275.0	331.9	47.2	80.2	127.4	459.3
1949	72.5	352.6	425.1	56.9	83.0	139.9	565.0
1950	71.2	384.6	455.8	57.4	90.7	148.1	603.9
1951	80.5	416.6	497.1	63.5	92.4	155.9	653.0
1952	87.4	445.9	533.3	66.1	101.7	167.8	701.1
1953	95.3	433.6	528.9	72.2	107.0	179.2	708.1
1954	77.1	282.9	360.0	68.3	105.9	174.2	534.2
1955	86.5	307.1	393.6	65.6	111.2	176.8	570.4
1956	98.1	353.4	451.5	72.8	121.0	193.8	645.3
1957	92.1	317.6	407.7	66.9	117.7	184.6	594.3
1958	100.2	342.9	443.1	72.9	133.0	205.9	649.0

Source:—Unpublished Data, Economics Division, Department of Trade and Commerce, Ottawa.

1957; total kilowatt-hours rose from 147 million to 1,558 million, a phenomenal increase of about 11 times, and the average number of kilowatt-hours per customer from 1,260 to 3,415 (Table 9).

It one wishes to get a closer look at disbursements with which farmers are concerned as operators of farm businesses he will examine official statistics on farm operating expenses. Table 10 summarizes these statistics for the 1950-59 period. There were variations in the size of the various types of expenses from year to year but, on the whole, they followed an upward trend; from $1,332 million in 1950 they rose to $1,890 million in 1959.

Agricultural Labor Force.—Canada's agricultural labor force increased steadily from 1,216,000 in 1931 to 1,379,000 in 1939, then declined to 1,118,000 in 1944, rose in all five following years except 1947, and has followed a steadily downward trend ever since to drop to 724,000 in 1959. As a percentage of the total Canadian civilian labor force it has declined almost consistently, from 36.4 per cent in 1933 to only 12.4 per cent in 1959 (Table 11).

The decline in the farm labor force should not be rigidly interpreted as a decline in agriculture's contribution to the national economy. In countries with a growing economy, and Canada is one of these countries, the farm population acts as a reservoir that supplies an increasingly large number of professional, industrial, commercial, skilled and other workers to other segments of the

Table 6.—Sales of Farm Implements and Equipment, Canada, 1936-58

Year	Planting, seeding and fertilizer machinery	Tillage, cultivating, weeding and ploughing machinery	Haying machinery	Harvesting machinery	Tractors and engines	Miscellaneous[a]	All types
	— thousand dollars —						
1936	1,316	5,752	1,039	2,543	6,633	2,061	19,344
1937	2,209	7,734	1,294	3,884	13,329	2,325	30,775
1938	1,855	7,205	1,434	7,099	15,972	2,648	36,213
1939	1,358	6,903	1,097	6,776	15,412	2,514	34,060
1940	2,271	10,447	1,497	9,896	21,301	2,336	47,748
1941	2,129	12,083	1,836	7,587	23,188	5,283	52,106
1942	2,570	10,420	1,818	10,211	19,644	5,799	50,462
1943	1,493	8,196	923	4,695	9,507	4,983	29,797
1944	2,135	5,533	1,625	9,548	22,487	13,496	54,824
1945	2,961	7,203	2,444	13,168	20,977	17,540	64,293
1946	3,646	10,185	3,733	15,211	24,983	23,940	81,698
1947	5,083	14,516	5,688	23,179	42,223	31,706	122,395
1948	7,023	21,298	9,351	36,047	63,065	33,882	170,666
1949	8,138	30,179	10,569	39,088	102,026	27,090	217,090
1950	8,806	28,430	10,610	44,243	98,001	28,097	218,187
1951	9,516	27,962	14,844	58,641	92,662	31,995	235,620
1952	9,151	28,373	17,230	74,336	89,992	31,196	250,277
1953	8,130	27,567	19,787	69,580	85,261	27,725	238,050
1954	5,707	17,845	17,730	26,195	55,168	24,058	146,703
1955	5,340	15,242	19,820	27,564	58,760	26,398	153,124
1956	6,094	15,089	27,245	34,753	63,262	24,324	170,767
1957	6,703	16,797	23,566	23,984	56,651	22,201	149,902
1958	7,104	19,446	26,257	29,851	63,171	26,185	172,014

[a] Miscellaneous includes machines for preparing crops for market or use; spraying and dusting orchard or garden; farm wagons, trucks, and sleighs; water systems, pumps and septic tanks; dairy machinery and equipment; barn, poultry and other farm equipment.

SOURCE:—*Farm Implement and Equipment Sales.* Industry and Merchandising Division, Dominion Bureau of Statistics.

Table 7.—Fertilizers Sold and Lime and Limestone Produced for Agricultural Purposes, Canada, 1935-59

Year ended June 30	Total fertilizer sold[a]	Lime produced	Limestone produced
	— tons —		
1935	212,479	6,430	81,564
1936	233,840	6,551	93,071
1937	298,276	6,697	111,428
1938	323,376	6,495	128,289
1939	334,003	8,547	191,833
1940	346,721	8,904	174,114
1941	324,201	15,144	216,657
1942	419,547	9,251	285,924
1943	498,861	13,299	271,036
1944	535,108	15,190	316,545
1945	575,107	14,420	419,579
1946	632,943	4,294	480,639
1947	660,721	6,664	450,553
1948	672,171	12,249	595,421
1949	741,726	15,274	649,220
1950	764,581	14,088	568,280
1951	770,507	14,709	567,300
1952	768,545	13,587	464,122
1953	819,803	12,310	510,547
1954	811,641	10,923	362,110
1955	790,774	5,420	424,028
1956	800,680	6,251	476,506
1957	808,251	3,181	610,398
1958	870,539	3,538	....
1959	908,214	......	....

[a] Excluding fertilizer used for manufacturing and exports of fertilizer.

SOURCE:—*Fertilizer Trade,* Annual Reports. Dominion Bureau of Statistics.

Table 8.—Sales of Pesticides, Canada, 1947-59

Year	Herbicides	Crop and seed treatment	Livestock treatments	Total[a]
	— thousand dollars —			
1947	1,046	3,936	449	5,432
1948	3,570	4,096	423	8,088
1949	4,676	4,946	535	10,158
1950	5,763	4,661	624	11,048
1951	5,926	4,501	1,182	12,610
1952	6,247	5,204	1,257	12,708
1953	5,700	6,292	1,587	13,579
1954	4,721	7,395	2,760	14,876
1955	5,730	7,834	4,798	18,362
1956	5,974	7,180	7,001	20,155
1957[b]	6,450	7,067	1,317[c]	14,834
1958	5,666	7,976	1,703	15,345
1959	7,608	9,630	1,748	18,986

[a] Excludes household and industrial insecticides and rodenticides.

[b] Beginning with 1957, 12 months ending September 30; previous periods of reporting were on a calendar year basis.

[c] Excludes medicated feeds since the registration of this product was discontinued in 1957.

SOURCE:—*Sales of Pest Control Products by Canadian Registrants.* Industry and Merchandising Division, Dominion Bureau of Statistics.

economy. Those remaining in agriculture benefit from the expansion in the remainder of the economy because of the increasingly expanding market for farm products resulting from the increase in total and non-farm population. Agriculture does not then enter into a debilitating stage, especially when it improves its ability to feed a larger number of people. Canadian farmers have amply demonstrated that ability.

Increases in production have led to an increase in income; they have also led to the Canadian farmer's ability to feed more people in Canada and to export more abroad. Table 12 depicts that ability and Table 14 shows the ensuing reward in the form of higher incomes, higher incomes for agriculture as a whole and for each individual farmer willing to take advantage of new opportunities. In 1940 one farm worker could "support" about 10 people; in 1957 he did support as many as 23, an achievement which clearly reflects the rapid progress of our agriculture.

Agricultural Exports.—Our agriculture accounts for a large part of our external trade. In the 1930-58 period, agricultural exports as a percentage of total produce exports have ranged from a high point of 45.3 per cent in 1932 to a low point of 18.7 per cent in 1955. The total value of agricultural exports rose in the 1950-54 and in the 1955-59 five-year periods but it declined as a percentage of total produce exports. From 39.8 per cent in the 1930-34 period and 34.8 per cent in the 1935-39 period it dropped to 26.1 per cent in 1950-54 and 19.9 per cent in 1955-59. The average total value, however, had risen from $245 million in 1930-34 and $307 million in 1935-39 to $1,012 million in 1950-54 and $945 million in 1955-59 (Table 13).

Farm Income.—Cash and net farm income vary from year to year but follow a generally upward trend. Gross income rose from an average of $806.1 million in the 1935-39 period to $1,454.4 million in the next five-year period, $2,551.4 million in 1950, and reached a peak of $3,500.2 million in 1952; it exceeded the $3 billion-dollar mark again in 1953, 1956, 1958 and 1959. Variation in total net income followed a closely similar trend but net income was at its highest points in 1951 and 1952 when it reached $1,937 million and $1,919.4 million respectively. From an average of $316.9 million

Table 9.—Farm Service Furnished by Central Electric Stations, Canada, 1944-57[a]

Year	Customers	Total kilowatt hours	Average kilowatt hours per customer
	No.	— 000 —	No.
1944	116,609	146,930	1,260
1945	130,078	176,812	1,359
1946	148,272	230,998	1,558
1947	169,518	285,753	1,686
1948	213,205	364,723	1,711
1949	250,866	439,570	1,752
1950	303,727	586,749	1,932
1951	336,345	701,131	2,085
1952	359,870	823,325	2,288
1953	384,347	930,808	2,420
1954	411,134	1,098,574	2,672
1955	441,694	1,238,061	2,803
1956	466,697	1,428,125	3,060
1957	456,248	1,557,931	3,415

[a] Newfoundland included only since 1956.

SOURCE:— (i) *Canada Year Books.*
(ii) *Central Electric Stations*, Annual Reports, Dominion Bureau of Statistics.

Table 10.—Farm Operating Expenses and Depreciation Charges, Canada, 1950-59[a]

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
	— thousand dollars —									
Taxes[b]	81,806	92,076	102,000	110,790	119,383	122,593	130,675	136,300	138,110	142,569
Gross rent	84,884	98,187	108,804	82,498	52,843	75,436	75,495	56,318	61,358	62,540
Wages paid to labor	145,620	160,210	173,989	173,314	160,818	162,971	174,150	175,378	179,982	184,364
Interest on indebtedness[b c]	32,547	34,101	36,180	37,850	39,276	40,755	43,899	45,114	45,444	47,225
Feed and seed purchased through market channels	271,620	276,579	285,682	240,155	274,527	280,197	321,167	300,695	316,727	348,561
Tractor expenses	123,887	131,404	139,357	148,807	157,109	161,957	176,246	178,268	194,399	196,021
Truck expenses	54,727	70,988	71,860	76,788	79,985	86,090	93,724	99,343	97,153	100,281
Automobile expenses for farm business	45,629	52,127	54,187	54,162	54,888	55,792	58,811	59,708	62,560	62,746
Engine and combine expenses	11,483	11,331	11,904	12,258	12,529	12,936	14,052	14,928	15,728	15,855
Machinery repairs[d]	60,638	57,890	62,515	63,611	56,076	58,357	64,127	65,340	68,863	78,209
Fertilizer and lime	41,903	46,951	50,905	58,044	56,021	54,079	55,644	56,979	62,004	68,952
Fruit and vegetables supplies[e]	25,310	30,280	31,309	30,150	29,258	33,787	37,199	38,910	34,325	37,968
Repairs to buildings[b]	44,206	65,645	82,964	87,684	88,569	85,300	99,011	90,991	94,790	105,105
Electric power	6,305	7,919	9,126	10,967	12,692	13,914	15,186	15,914	18,250	19,428
Miscellaneous [f]	82,410	96,562	99,251	99,111	99,826	104,907	116,498	109,176	119,073	128,923
Depreciation, buildings[b] and machinery	218,725	249,844	260,767	276,503	285,375	284,789	284,769	285,349	287,049	291,747
Totals, operating expenses and depreciation	1,331,700	1,482,094	1,580,800	1,562,692	1,579,175	1,633,860	1,760,633	1,728,711	1,795,815	1,890,494

[a] Excluding Newfoundland.

[b] Owned land and buildings only

[c] Secured and unsecured debt.

[d] Repair parts and machine shop charges.

[e] Pesticides, containers and nursery stock.

[f] Veterinary expenses, binder and baler twine, irrigation charges, fence repairs, rope, salt, hardware, purchases of livestock, livestock registration, artificial insemination charges, etc.

SOURCE:—(i) *Handbook of Agricultural Statistics*, Part II, Farm Income—1956-57, Farm Finance Section, Agriculture Division, Dominion Bureau of Statistics.
(ii) Quarterly Bulletin of Agricultural Statistics, *D.B.S.*, January-March, 1960, p. 11.

for the 1935-39 period it rose to $784.8 million in the 1940-44 period, $1,219.8 million in 1950 and dropped to $1,277.6 million in 1958 and $1,189.4 million in 1959 (Table 14).

Agriculture's share of the "gross domestic product at factor cost", that is its share in the form of farm net income plus depreciation charges, has been declining almost steadily from year to year. From 18.1 per cent in 1926 it dropped to 11.6 in 1930, fluctuated from a low point of 8.0 per cent in 1931 to high points of 12.5 per cent in the 1931-53 period; it never exceeded 7.5 per cent in subsequent years and even reached low points of 5.4 per cent in 1957 and 5.5 per cent in 1959 (Table 15).

When total amounts are considered, however, one finds that agriculture's share has increased fairly consistently since 1935. From an average of $389 million a year for the 1930-34 period it rose to $488 million in 1935-39, $966 million in 1940-44, $1,444 million in 1945-49 and $2,098 in 1950-54; it declined, however, to $1,732 million in the subsequent five-year period.

Table 11.—Estimates of the Canadian Civilian Labor Force, All Industries and Agriculture, by Sex, at June 1 Dates,[a] 1931-58[b]

Year	Total all industries			Agriculture			Agriculture as per cent of all industries
	Male	Female	Total	Male	Female	Total	
	— thousands of persons with jobs —						— per cent —
1931	2,931	739	3,670	1,087	129	1,216	33.1
1932	2,747	723	3,470	1,100	137	1,237	35.6
1933	2,721	728	3,449	1,113	144	1,257	36.4
1934	2,932	775	3,707	1,126	151	1,277	34.4
1935	2,982	795	3,777	1,139	159	1,298	34.4
1936	3,073	822	3,895	1,153	166	1,319	33.9
1937	3,254	861	4,115	1,166	173	1,339	32.5
1938	3,209	857	4,066	1,179	180	1,359	33.4
1939	3,247	873	4,120	1,192	187	1,379	33.5
1940	3,273	911	4,184	1,166	178	1,344	32.1
1941	3,313	958	4,271	1,066	158	1,224	28.6
1942	3,364	1,070	4,434	943	196	1,139	25.7
1943	3,136	1,355	4,491	947	171	1,118	24.9
1944	3,098	1,387	4,485	948	188	1,136	25.3
1945	3,053	1,394	4,447	943	201	1,144	25.7
1946	3,649	1,089	4,738	1,071	200	1,271	26.8
1947	3,793	1,069	4,862	1,001	171	1,172	24.1
1948	3,880	1,074	4,954	1,026	160	1,186	23.9
1949	3,892	1,099	4,991	982	132	1,114	22.3
1950	3,944	1,112	5,056	973	93	1,066	21.1
1951	3,993	1,162	5,155	892	99	991	19.2
1952	4,059	1,180	5,239	841	86	927	17.7
1953	4,097	1,174	5,271	848	50	898	17.0
1954	4,074	1,181	5,255	858	35	893	17.0
1955	4,144	1,227	5,371	837	36	873	16.3
1956	4,271	1,301	5,572	777	42	819	14.7
1957	4,376	1,398	5,774	733	39	772	13.4
1958	4,316	1,434	5,750	683	56	739	12.9
1959	4,361	1,491	5,852	677	47	724	12.4

[a] All data are for survey dates nearest June 1.

[b] Newfoundland included from 1950.

Source:— (i) *Canadian Labour Force Estimates,* 1931–1945. Reference Paper No. 23 (Revised). Dominion Bureau of Statistics.

(ii) *The Labour Force, November* 1945–July 1958. Reference Paper No. 58. 1958 Revision. Dominion Bureau of Statistics.

(iii) Labour force surveys of the Dominion Bureau of Statistics.

This table was extracted from *Trends in the Agricultural Labour Force in Canada,* a bulletin prepared in 1960 by the Economics and Research Branch of the Department of Labour, Ottawa.

Conclusion.—Agriculture is not a well-demarcated industry since it consists of many industries of varying sizes and is allied to other industries concerned with the transportation, manufacture, processing, and sale of products of farm origin. Moreover, farmers often combine agriculture with other occupations such as fishing, lumbering, and retail trading.

Farmers also help other segments of the economy not only in making food and other materials available to the transportation, processing and other industries but also as buyers of goods used in the building, furnishing and upkeep of their homes, buyers of clothing, and buyers of many services such as those relating to education, health, travel, and recreation.

The chief characteristic of what many people call the agricultural revolution of the postwar era is the ability of an ever-decreasing number of farms to produce an ever-increasing quantity of products of higher quality to feed the people of Canada and of other countries. This agricultural revolution is a cause for optimism but this optimism is somewhat tempered by the problems which the revolution brings in its train. Agriculture is becoming more intensive and more productive but the net returns which it secures tend to rise at a slower rate than incomes to most other sectors of our national economy. Moreover, the change from a "way of life" to a "business" concept, for our agriculture, has intensified the economic difficulties of the "small" farmers and of farmers living in "marginal" or "sub-marginal" areas.

Table 12.—Value of Farm Output per Person Employed in Agriculture, Index of Farm Production and Number of Persons Supported by One Farm Worker, 1935-59

Year	Farm Output [a]	Output per person employed in agriculture[b]	Index of farm production 1935–39 = 100[c]	Number of persons supported by one farm worker[d]
	— thousand dollars —			
1935	702,418	541	95.2	10.7
1936	804,701	610	85.1	11.9
1937	826,499	617	83.7	10.0
1938	859,074	632	107.4	9.3
1939	942,666	684	128.7	9.6
1940	988,749	736	130.1	9.9
1941	1,125,309	919	109.1	11.5
1942	1,658,635	1,456	164.2	12.2
1943	1,760,197	1,574	113.7	14.4
1944	2,190,666	1,928	140.4	16.2
1945	2,163,291	1,891	110.9	17.8
1946	1,976,023	1,555	125.6	12.2
1947	2,272,558	1,939	116.0	13.3
1948	2,723,198	2,296	125.1	13.1
1949	2,809,961	2,522	122.3	14.8
1950	2,537,651	2,381	137.8	14.1
1951	3,408,728	3,440	154,7	15.7
1952	3,495,108	3,770	166.2	19.6
1953	3,205,502	3,570	157.9	20.5
1954	2,797,972	3,133	119.7	18.9
1955	2,890,496	3,311	150.4	19.1
1956	3,191,213	3,896	169.4	22.0
1957	3,040,100	3,938	133.9	23.1
1958	3,218,590	4,355	145.1	25.8
1959	3,197,107	4,620	143.6	27.2

[a] Includes cash income, income in kind and inventory changes.

[b] Derived by dividing total farm output by persons employed in agriculture.

[c] *Index of farm production, 1959.* Farm Finance Section, Agriculture Division, Dominion Bureau of Statistics.

[d] Derived by dividing output per farm worker by consumption per consumer.

Table 13.—Total Exports of Canadian Produce and Agricultural Exports, Canada, 1930-59

Year	Total exports of Canadian produce[a]	Agricultural exports[b]	Agricultural exports as a percentage of total
	— million dollars —		
1930	864	322	37.3
1931	588	206	35.0
1932	490	222	45.3
1933	529	225	42.5
1934	649	252	38.8
1935	725	272	37.5
1936	938	404	43.1
1937	997	315	31.6
1938	838	254	30.3
1939	925	291	31.5
1940	1,179	324	27.5
1941	1,621	409	25.2
1942	2,364	425	18.0
1943	2,972	679	22.8
1944	3,440	990	28.8
1945	3,218	1,063	33.0
1946	2,312	770	33.3
1947	2,775	848	30.6
1948	3,075	910	29.6
1949	2,993	959	31.9
1950	3,118	818	26.2
1951	3,914	1,020	26.1
1952	4,301	1,220	28.4
1953	4,117	1,147	27.9
1954	3,881	853	22.0
1955	4,281	801	18.7
1956	4,789	1,013	21.2
1957	4,839	909	18.8
1958	4,825	1,034	21.4
1959	5,061	970	19.2

[a] *Trade of Canada*—Dominion Bureau of Statistics.

[b] *Canada Trade in Agricultural Products with the United Kingdom, the United States and all Conntries*, Economics Division, Canada Department of Agriculture, May 1960.

Table 14.—Total Gross and Net Farm Income and Gross and Net Farm Income per Farm, Canada, 1935-59

Year	Total gross income	Total net income	Gross income per farm	Net income per farm
	— thousand dollars —		$	$
1935–39	806,072	316,940	1,156	455
1940–44	1,454,374	784,807	2,170	1,172
1945–49	2,243,373	1,209,263	3,486	1,880
1950	2,551,457	1,219,757	4,059	1,940
1951	3,419,084	1,936,990	5,487	3,108
1952	3,500,239	1,919,439	5,706	3,129
1953	3,207,074	1,644,382	5,311	2,723
1954	2,604,447	1,025,272	4,383	1,726
1955	2,923,824	1,289,964	5,001	2,206
1956	3,217,837	1,457,204	5,596	2,534
1957	2,765,920	1,061,508	4,892	1,877
1958	3,079,085	1,277,562	5,540	2,299
1959	3,071,614	1,189,388	5,624	2,178

Table 15.—Gross Domestic Product at Factor Cost, Canada 1926-59[a]

Year	Canada	Agriculture's contribution	Agriculture's share as a percentage of the total
	— million dollars —		per cent
1926–29	5,353	850	15.9
1930–34	3,966	389	9.8
1935–39	4,534	488	10.8
1940	6,074	693	11.4
1941	7,424	680	9.2
1942	9,344	1,160	12.4
1943	10,041	961	9.6
1944	10,781	1,335	12.4
1945	10,804	1,160	10.7
1946	10,791	1,331	12.3
1947	11,857	1,422	12.0
1948	13,699	1,706	12.5
1949	14,885	1,600	10.7
1950	16,458	1,716	10.4
1951	19,126	2,382	12.5
1952	21,344	2,421	11.4
1953	22,206	2,048	9.2
1954	22,213	1,482	6.7
1955	24,326	1,767	7.3
1956	27,189	1,973	7.3
1957	28,298	1,520	5.4
1958	29,045	1,717	5.9
1959	30,898	1,685	5.5

[a] *National Accounts. Income and Expenditure,* 1926–1956 and 1959. Research and Development Division, Dominion Bureau of Statistics. (G.D.P. is derived from Gross National Product after deducting: the residual error of estimate; indirect taxes less subsidies; income received from non-residents and adding income paid to-non-residents).

Our farmers want to maintain or reach levels of living comparable to those enjoyed by workers in business and industry. Farm costs in Canada are high and, to reach a high level of living, farmers must secure higher prices for their products than farmers elsewhere, except probably in the United States where costs are also high. In a competitive economy the gap between market prices and higher prices expected by farmers is usually filled by artificial means, the government intervening through an agricultural prices support or stabilization policy, import controls, tariffs and other control measures.

Governmental intervention becomes necessary when an almost perfectly competitive economy such as agriculture operates within the framework of a national economy with an imperfectly competitive character. Economic individualism may prevail in agriculture but, nevertheless, agriculture should not be left to become the victim of conditions that stem from its own very nature. Changes in agriculture's total and relative contributions to the national economy and constant variations in the structure of the agricultural economy amplify the complexity of problems in an industry that, more than any other, is subject to the vagaries of biological and other natural factors. Agriculture is also economically weak since each individual farmer is an isolated seller in the market for his products, an isolated seller which has little if anything to say about the prices to be fetched by his products. The ills of this isolationism, however, can be cured or at least tempered through recourse to co-operative action and the organization of farmers' marketing boards that give the farmers a louder voice in the agriculutral markets.

THE CATTLE FEEDING ENTERPRISE IN SASKATCHEWAN

K. I. Vick

The increase in beef cattle finishing on Saskatchewan farms is stimulating the quest for a better understanding of the business aspects of this enterprise. To comply with requests for research work, as a guide to the better organization and management of this enterprise, agricultural economists at the Saskatchewan regional office of the Economics Division initiated a two-phase study of the economic aspects of that enterprise in 1959. The first phase of the study consisted in the collection of relevant information in the fall of 1959 from 24 farmers in Rural Municipalities Nos. 405 and 442, who winter-feed cattle as a supplement to other farming activities. The second phase entailed the collection of similar information in July 1960 from five farmers in the Rosetown-Kindersley area who have commercial cattle feeding businesses.

Cattle Feeding on 24 Farms in R.Ms. 405 and 442

Grain growing was the major enterprise on the 24 farms visited. The acreage of these farms ranged from 480 to 3,980 acres and averaged 1,398 acres per farm; the improved acreage comprised 54 per cent of the total, on the average. Some farmers had livestock enterprises other than the beef cattle enterprise (Table 1).

Table 1.—Livestock Numbers per Farm Reporting, 24 Farms, R.Ms. 405 and 442, Saskatchewan, 1959

	Dairy cattle	Beef cattle	Hogs	Sheep	Chickens	Turkeys
Average	7	81	36	62	72	14
Range	1–41	10–174	5–70	—	1–305	3–25
Number of farms reporting	17	24	14	1	19	2

Cattle Feeding.—All 24 farmers fed cattle which they raised themselves and three purchased some additional cattle for their feedlot. The date cattle were put on feed ranged from October 15 to December 1. The cattle put on feed were mostly spring and winter calves. Sixteen farmers fed only calves, four fed only yearlings, and four fed both calves and yearlings. The number of days the farmers kept their cattle on feed ranged from 30 to 240 and averaged 148. The variation in the length of the feeding period was related to the price offered for cattle, the amount of finish the farmers wanted on their cattle and the farmer's need for cash.

The cattle were all fed in the same pen, whether calves or yearlings and the ration was the same for all cattle. A period of 8-10 weeks was required to bring the cattle up to full feed. Throughout this period the amount of grain in the ration was gradually increased from 2-4 pounds to 15-20 pounds per head per day and the roughage ration was decreased from an unlimited amount to about four pounds per head per day. Grains used for feeding included wheat, barley, and oats. The roughage fed was usually wheat straw but some farmers fed hay or a mixture of hay and straw. Ten farmers added some mineral supplements to the ration. Plenty of water was provided for the cattle and the water was kept at a suitable drinking temperature during the winter by the use of tank heaters which derived their energy from electricity, fuel oil, or coal and wood.

Farmers performed many tasks during the feeding period. Some of these tasks were done at regular intervals and others as necessity arose. Twenty-three farmers fed their cattle twice daily and one used self-feeders which he recharged every four days. Feed grinding was also done at regular intervals. The frequency of grinding varied from farm to farm; one farmer grinding every day; five once a week; seven every two weeks; and the other 11 once a month. Repair and maintenance of feedlot machinery, equipment, and feeding pens was done when called for, and veterinary treatments given when required. One farmer cleaned his feeding pens once each month during the feeding period and the other 23 farmers cleaned the pens only at the end of the feeding period. Twelve farmers prepared their cattle for market either by cleaning or inoculating them for shipping fever or both. Twenty-two farmers hired commercial truckers to transport their cattle to market; the other two hauled their own cattle. Farmers not hauling their own cattle, however, often drove to the market place to watch them being sold.

Capital Assets.—For purposes of analysis the 24 farm records were divided into low, middle and top thirds according to the net returns to the cattle enterprise. These returns included receipts from cattle sales and credits accruing to the enterprise for cattle retained in the herd and the value of cattle slaughtered for home consumption, less total operating costs.

Table 2 summarizes data on average investment in cattle, buildings, machinery and equipment and facilities. The total investment by operators in the top third group was, on the average, larger than investment by operators in the other two groups. The average aggregate investment in buildings, machinery and equipment and facilities totaled $4,595, $4,290, and $4,501 respectively, for the low, middle and top groups; variations in the size of this type were not large enough to account for difference in the cattle feeding enterprise. However, the money invested in cattle, as a proportion of the total investment differed enough among groups to have some influence on the size of net returns; it represented only 34 per cent of the total investment in the low and middle groups, on the average, but 47 per cent of the total in the top third group.

Table 2.—Average Investment in the Cattle Feeding Enterprise, According to Size of Net Returns, 24 Farms, R.Ms. 405 and 442, Saskatchewan, 1959

	Net Return Groups			
	Low third	Middle third	Top third	All 24 enterprises
	—dollars invested—			
Cattle	2,355	2,227	3,953	2,845
Buildings	2,496	1,512	2,463	2,157
Machinery and equipment	1,352	1,913	1,355	1,540
Facilities	747	865	683	765
Total	**6,950**	**6,517**	**8,454**	**7,307**

Operating Costs.—Data on cattle feeding costs are summarized in Table 3. Interest on fixed investment was charged at five per cent a year. The interest on cattle investment was also charged at five per cent annually but was based on the length of the feeding period. Depreciation charges on capital assets were made in accordance with depreciation schedules established for the study of

Table 3.—Average Operating Costs for the Cattle Feeding Enterprise, According to Size of Net Returns, 24 Farms, R.Ms. 405 and 442, Saskatchewan, 1959

	Net return groups				
	Low third	Middle third	Top third	All 24 enterprises	All 24 enterprises
	—costs in dollars—				—per cent of total—
Interest on investment	262	252	293	269	14.2
Depreciation of capital assets	370	364	331	355	18.7
Cash expenses:					
Feed	567	698	1,132	799	42.0
Operating	130	177	152	153	8.0
Labor—					
Hired and paid family labor	257	219	157	211	11.1
Marketing	101	104	119	108	5.7
Cattle losses	15	—	—	5	.3
Total operating costs	**1,702**	**1,814**	**2,184**	**1,900**	**100.0**

"Changes in Farm Organization"[1] in the Prairie Provinces. The average cash expenses of all 24 farmers were 66.8 per cent of total operating costs, feed alone representing 42.0 per cent of these costs. Other cash expenses included operating expenses, wages of hired and paid family labor and marketing expenses. Operating expenses were expenses incurred for servicing, maintenance and repair of tractors, trucks and cars and for electricity and heating fuel, veterinary fees, veterinary supplies, travel and telephone and the maintenance and repair of feedlot buildings, equipment and facilities.

Feed was the most important cost item, followed by depreciation of capital assets and interest on investment. The differences in charges for depreciation and interest on investment between the low, middle and top thirds was insignificant but the average expenses for feed by the top third group was nearly twice the amount spent by the low third group. Feed costs obviously increased with the number of cattle fed. The average numbers of cattle fed by farmers in the low, middle and top thirds were 22, 25, and 35 head respectively.

Profitability.—Average returns to the operator (profit or loss) for the low, middle and top third groups and for all 24 cattle feeding enterprises are listed in Table 4. On the average, operators in the low and middle groups and all 24 operators as a group suffered losses but operators in the top third group made a small profit. The data used in preparing Table 4 are based on farmers' estimates. A buoyant market for feeder cattle existed in the fall of 1958 and this may have caused some farmers to overestimate the values of their cattle at the start of the feeding period. This meant that some farmers were selling at lower prices per pound than prices used in valuing their feeders at the start of the feeding period and, as a consequence, they registered a loss on their operations. The average sale margins of the low, middle and top thirds were zero, 1.5 and 1.75 cents a pound respectively, and the average for all 24 farmers was one cent a pound. The respective margins which they required to break even were 13, 3.66, and 1.33 cents a pound, and the average for the 24 farmers was 5.5 cents a pound. Most of the 24 farmers interviewed kept no records of the amount and cost of feed or of other costs but, on the basis of their estimates, the average feed costs for the low, middle and top third groups were 21, 14, and 13 cents per pound of gain respectively whereas the average total

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[1] A continuous study carried by the Economics Division to determine the changes which occur in farming practices in the Prairie Provinces.

Table 4.—Average Net Returns to Operators of Cattle Feeding Enterprises, for the Low, Middle and Top Third Return Groups, 24 Farms, R.Ms. 405 and 442, Saskatchewan, 1959

	Low third	Middle third	Top third	All 24 enterprises
	—dollar returns—			
Receipts and credits from:				
Sales	2,575	3,551	5,847	3,991
Home use	—	24	—	8
Holdovers	208	41	540	263
Gross income from receipts and credits	2,783	3,616	6,387	4,262
Total operating costs (A)	1,702	1,814	2,184	1,900
Value of cattle at start of feeding period (B)	2,355	2,228	3,916	2,833
(A) and (B)	4,057	4,042	6,100	4,733
Return to operator's labor	−1,274	−426	287	−471

operating costs for the low, middle and top third groups were 81, 41, and 26 cents per pound of gain, respectively, and the average total operating costs of all 24 enterprises were 49 cents per pound of gain. Based on prices for good slaughter steers, at the Saskatoon market, as reported in the Annual Livestock Review, 1959,[1] the average price at which the 24 farmers sold their cattle was 22.83 cents a pound, which is less than half the average total operating costs.

Cattle Feeding on Five Farms in the Rosetown-Kindersley Area

All five farms produced grain; they ranged in size from 640 to 5,480 acres and averaged 2,024 acres per farm. The average improved acreage per farm was 91 per cent of the total farm area. Apart from feeder cattle the five farmers kept livestock for home use only, with the exception of one farmer who had 100 hogs.

Cattle Feeding.—The operations of these five cattle feeding businesses depended more on prices and the market situation than the operations of the 24 cattle enterprises studied in R.Ms. 405 and 442.

Nearly all the cattle being fed were purchased. The number of cattle finished on the five farms averaged 856 head per farm in 1959. The smallest number of feeders finished by any one of the five farmers was 350 head. The five farmers usually bought feeders weighing about 800 pounds and marketed them when they weighed between 1,100 and 1,150 pounds. Few calves were fed, because they required more care and were slower to make gains.

All five farmers were feeding some cattle the year round but the number of cattle on feed during the summer and fall months were usually much smaller than at other times of the year. The farmers usually bought their feeder cattle from late September to early January, depending on the price. Feeding periods ranged from 140 to 210 days but most of the cattle were marketed after 160 days on feed. Farmers usually preferred selling when cattle had reached the desired weight or finish, rather than waiting for a better price. They said that to continue feeding after the cattle had reached the desired finish would cost more than the difference between current and expected higher prices. Cattle usually fetched the highest prices when finished to suit market requirements.

From six to eight weeks were required to bring the cattle to full feed. A full feed consisted of about 15-20 pounds of grain and about 4-5 pounds of roughage per head per day, plus whatever supplements were considered necessary. The five farmers fed a great deal of supplements such as hormones, antibiotics, vitamins and minerals. One farmer fed sugar beet pulp, linseed oil meal cake, alfalfa meal and molasses; the other four farmers fed mainly processed protein supplements, vitamin "A", and minerals. All five farmers implanted their feeders with growth hormones. All five farmers also had self-waterers; the water was heated by electricity during the winter.

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[1] *Fortieth Annual Livestock Review, 1959,* published by the Markets Information Section, Production and Marketing Branch, Department of Agriculture, Ottawa.

Three farmers used various combinations of augers, hoppers and conveyor systems to facilitate feeding. The other two were in the process of converting from a manual feeding system to mechanized feeding. The chief benefit of mechanized feeding is the reduction of labor requirements.

The feeding pens on all five farms had high board fences on the west, north and east sides. The pens were cleaned once a year. At regular intervals throughout the feeding period, straw was added to the manure pack to keep it warm and dry.

All five farmers checked the feeders' rates of gain when the feeders were first placed in the feedlot. Those cattle not gaining weight fast enough were separated from the main herd for closer observation. They were culled if their rate of gain remained slow.

Besides feeding and culling the farmers performed such tasks as implanting the feeders with growth hormones, veterinary treatments, maintaining and repairing buildings, machinery and equipment and facilities used in cattle feeding enterprise and loading and hauling cattle to market. They dry-fed their cattle for 24 hours before shipment to market. Even though the cattle were dry-fed, a six per cent weight shrinkage was expected during the time required to haul the cattle from farm to market. All five farmers cleaned their cattle before going to market. They lived from 110 to 180 miles away from Saskatoon, where they did their marketing.

They had agreements with commission agents to handle their cattle buying and selling. In some instances the commission agents backed the farmer's notes when they purchased cattle. Two farmers hauled their cattle to market with their own semi-trailer units, two others hired truckers and one hauled some of his cattle and hired truckers to haul the remainder.

Capital Assets.—Total investment in the capital business averaged $165,461 per farm, including $128,853 for cattle, $1,150 for land, $12,280 for buildings, $8,920 for machinery and equipment, and $14,258 for facilities. Feedlots ranged from five to 50 acres in size and averaged 16 acres per feedlot; their value ranged from $50 to $90 and averaged $70 an acre.

Profitability.—All five farmers kept accurate records of operating costs for each group of feeders placed in the feedlot. These costs included a share of the annual interest on investment as well as the annual depreciation charges. Costs for grinding and mixing feeds were apportioned to each group. A summary of the receipts and costs for one group of feeders finished by each of the five farmers is given in Table 5. Each of the groups made a profit on the gain in weight since total operating costs per pound of gain were lower than the selling price per pound; the margin between the purchase and the selling price was an additional profit. The five farmers said that although they had made an over-all profit on their 1959 operations they had broken even for some groups of feeders and suffered losses on others.

The margin between the purchase and the selling price is one of the critical factors determinating profitability. A summary of the margins required to break even at different assumed selling prices is given in Table 6. In arranging this table we assumed that 800-pound feeders were purchased; that they were sold at 1,100 pounds, that the cost of adding a pound of gain was 20 cents, and that the sale price in each of the five cases was 30, 25, 20, 15, and 10 cents respectively.

Table 5.—Summary of Receipts and Costs for One Group of Feeder Cattle Finished by Each of Five Farmers with a Cattle Feeding Business, Rosetown-Kindersley Area, Saskatchewan, 1959

Record number	At time of selling			At time of purchase			Gain			Total operating cost per:		Profit from			(A)+(B)
												Gain	Margin		
												A	B		
	Weight	Price per pound	Value per head	Weight	Price per pound	Value per head	Weight	Price per pound	Value per head	pound of gain	head	Per head	Per pound	Per head	Per head
	pound	—dollars—		pound	—dollars—		pound	—dollars—				—dollars—			
1	1,100	0.210	231.00	800	0.190	152.00	300	0.210	63.00	0.200	60.00	3.00	0.020	16.00	19.00
2	1,150	0.220	253.00	800	0.200	160.00	350	0.220	77.00	0.180	63.00	14.00	0.020	16.00	30.00
3	1,100	0.210	231.00	750	0.185	138.75	350	0.210	73.50	0.185	65.75	7.75	0.025	18.75	26.50
4	1,100	0.225	247.50	800	0.215	172.00	300	0.225	67.50	0.220	66.00	1.50	0.010	8.00	9.50
5	1,150	0.240	276.00	850	0.200	170.00	300	0.240	72.00	0.200	60.00	12.00	0.040	34.00	45.00
Average	**1,120**	**0.220**	**247.50**	**800**	**0.200**	**158.55**	**320**	**0.220**	**70.60**	**0.200**	**62.95**	**7.65**	**0.020**	**18.55**	**26.20**

Table 6.—Summary of the Margins Required to Break Even at Different Assumed Selling Prices

Purchase	Sale				Total operating cost	Break even price	
Weight	Weight	Price per pound	Value per head	Per head	Per head	Per pound	Margin per pound
—pounds—			—dollars—			—cents—	
800	1,100	0.30	330	60	270	0.338	−3.8
800	1,100	0.25	275	60	215	0.269	−1.9
800	1,100	0.20	220	60	160	0.200	0.0
800	1,100	0.15	165	60	105	0.131	1.9
800	1,100	0.10	110	60	50	0.062	3.8

An examination of Table 6 shows that as long as the selling price per pound is the same as the over-all cost of adding a pound of weight to a feeder the farmer can break even. If the selling price is higher than the over-all cost per pound of gain the farmer can afford to pay more per pound for the feeder than the final selling price and still break even.

Our findings have shown that the larger cattle feeding enterprises have prospered whereas the smaller ones have not. The profitability of a cattle feeding enterprise, however, may not be related to size alone. Some of the smaller cattle feeding enterprises might have done better had the operators exercised the same care in their feeding practices and in their management as operators of larger cattle feeding businesses. There seems to be an art to feeding cattle and it may be that the farmers with small enterprises and with little to lose if they made mistakes have not learned the art as well as farmers with larger enterprises and a much higher price to pay for their mistakes.

PUBLICATIONS OF THE ECONOMICS DIVISION

The Fruit Canning Industry of Ontario. Eaton, E. S. and G. I. Girard. Ottawa. December 1960. pp. 32.

A study of the fruit canning industry in Ontario, especially concerned with the production and marketing of canned fruit, the negotiation of contract prices and tariffs on fresh fruits.

Canada and the United States, Tariffs on Selected Agricultural Products. Ottawa. February 1961.

A revision of a bulletin published in 1957; it includes the changes made in the Custom's tariff on agricultural products since that year.

A Summary of Statistics Relative to the Enquiry into the Price of Farm Machinery. Haase, Gordon. Ottawa. February 1961. pp. 70.

A report especially prepared for the Standing Committee of the House of Commons on Agriculture and Colonization. The author provides a detailed statistical description and analysis of general price movements in Canada, the farm income situation, farm costs and farm machinery prices, investments in farm machinery and improvements, sales of farm implements and equipment and repair parts, and of production, domestic sales, imports and exports in the farm machinery industry in Canada.

OTHER PUBLICATIONS

From Armchair to Farm. Reproduced from *Free Press Weekly Prairie Farmer*, Winnipeg, Manitoba. 1960. pp. 35.

This booklet contains five articles on some of the chief problems encountered by the farmer as a farm manager and by the agricultural economist as a research worker helping the farmer to solve his management and other economic problems.

Jake Brown (Farm management specialist, Saskatchewan Department of Agriculture) tells the reader about the type of "farm operation" he would choose, why he would choose it, how he would finance it and what he expects his profit and loss statement to show once he became established.

J. C. Gilson (Associate professor, Department of Agricultural Economics, University of Manitoba) gives some answers to the young man asking himself how he can get started in farming. These answers are mainly concerned with types of tenure, location of a farm, capital requirements and the financing of the farm business, and different types of farm organization.

Gordon Haase (Head of the Edmonton regional office of the Economics Division of the Canada Department of Agriculture) is concerned with the decisions to be made by the would-be and the established farmers and ends his comments with suggestions about budgeting and other aspects of farm planning, and a list of eight "beginners' rules" to guide the new farmer along.

H. L. Patterson (Director, Farm Economics and Statistics Branch, Ontario Department of Agriculture) shows his helping hand by tackling and offering solutions to the problems confronting a young farmer in Ontario. He unrolls the whole planning and organization process for the benefit of this particular farmer and of the reader.

L. B. Kristjanson (Farm management specialist, Manitoba Department of Agriculture) tells the reader how he "would start farming if" he "had a total of $10,000 cash." He is chiefly concerned with investment and management problems.

Progress in Operations Research. Volume I, edited by Russell L. Ackoff of the Case Institute of Technology. John Wiley & Sons, Inc., New York and London. 1961. pp. XII + 505.

This volume deals primarily with technical progress in operations research, techniques of model construction and of solution-finding from these models. A listing of the chapter headings and of the names of the writers of these chapters may suffice to sketch the wide scope of the topics discussed and of the mastery displayed in handling these topics. They are as follows: 1) *The Meaning, Scope and Methods of Operations Research,* by Russell L. Ackoff; 2) *Decision and Value Theory,* by C. West Churchman; 3) *A Survey of Inventory Theory from the Operations Research Viewpoint,* by Fred Hanssmann; 4) *Mathematical Programming,* by E. Leonard Arnoff and S. Sankar Sengupta; 5) *Dynamic Programming,* by Stuart Dreyfus; 6) *Dynamics of Operational Systems: Markov and Queuing Processes,* by Philip M. Morse; 7) *Sequencing Theory,* by Roger L. Sisson; 8) *Replacement Theory,* by Burton V. Dean; 9) *The Theory and Application of Simulation in Operations Research,* by George W. Morgenthaler; 10) *Military Gaming,* by Clayton J. Thomas; and 11) *Progress in Operations Research: The Challenge of the Future,* by John F. Magee and Martin L. Ernst.

The editor would have liked to supply an even more comprehensive review of operations research but, as he says in his preface, "It was hoped that the volume would contain a treatment of business gaming, but my efforts to obtain an article on this subject failed. The lack of a chapter on game theory is conspicuous, but it was not included because of the paucity of practical applications of the theory."

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

A. H. TURNER, Director

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ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials[b]	Total	Food	
		1935-39=100						1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49 6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100 0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153 0
1959	230.6	222.8	173.9	271.6	245.3	269.5	219 1	126.5	121.1	165.4
1960	230.9	219.8	175.1	264.4	239.5	276.7	222.7	128.0	122.2	167.6
1960										
Jan	230.7	218.6	179.5	257 7	236.0	268.7	221.9	127.5	121.6	173.5
Feb	230.2	215.9	179.7	252.0	232.8	....	....	127 2	120 8	170.1
Mar	229.8	217.5	182.8	252.2	233.0	....	....	126.9	119.4	171.7
April	231.5	222.2	188.3	256.2	240.0	279.9	223.4	127.5	120.9	166.8
May	231.6	223.9	190.1	257.8	241.7			127.4	120.2	167·3
June	232.4	229.0	192.9	265.0	245.7	....	....	127.6	120.8	166.9
July	232.4	225.7	181 3	270.1	247.4	....	....	127.5	120.5	164.0
Aug.	230.5	216.3	160 9	271.7	236.5	281.6	222.9	127.9	121.7	165.6
Sept	230.5	217.2	160.7	273.6	239.7			128.4	123.3	167.6
Oct	230.6	215.7	161 9	269.4	240.0	....	....	129.4	125.8	166.9
Nov	229.9	216 5	161.8	271.2	239.5	....	....	129.6	125.5	165.9
Dec	230.4	219.6	162.7	276.5	242.0	....	....	129.6	125.3	166.0
1961										
Jan	231.3	221.1	163.7	278.5	243.0	271.8	223.5	129.2	124.4	165.5
Feb	231.6	220.5	163.3	277.7	243.8	....	....	128.9	123.4	165.8
Mar	231.3	216.2	162.4	269.9	241.4	....	....	129,1	124,0	165.3
April	230.9	213.0	162.8	263.1	237.4	....	....	129.1	123.9	....
May	231.3	213.8	161.7	266.0	236.3	....	....	129.0	123.2	....

Note:–See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.
1960 indexes are subject to revision, since tax and interest rate figures are preliminary.

(b) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

Gross National Product.—Canada's G.N.P. for 1960 totaled $35,959 million, which is about three per cent above the level of 1959. The physical volume of output was about two per cent higher than in 1960 and final product prices were about one per cent higher.

External Trade.—Canada's total exports to all countries declined to $371.9 million in February 1961 from $430.1 million in February 1960. The January-February value declined to $828.8 million in 1961 from $851.9 million in 1960. Imports to all countries dropped to $396.2 million in February 1961 from $452.9 million in February 1960. The January-February total declined to $827.4 million in 1961 from $852.3 million in 1960. The import balance in trade with all countries rose to $24.3 million in February 1961 from $22.8 million in February 1960. In January-February there was a small export balance in 1961 and a small import balance in 1960.

Total exports to the United States declined to $205.7 million in February 1961 from $253.8 million in February 1960 and the January-February total dropped to $430.2 million in 1961 from $503 million in 1960. February imports from the U.S. dropped to $274.9 million in 1961 from $324.2 million in 1960; the January-February total dropped to $573.2 million from $607.4 million. The February import balance dropped to $69.2 million from $70.4 million but the January-February balance rose to $143 million from $104.4 million.

Exports to the United Kingdom rose to $71.3 million in February 1961 from $67.9 million in February last year and January-February exports to $166.7 million from $136.5 million. February imports from the U.K. declined to $44.8 million in 1961 from $48.6 million in 1960 but January-February imports rose to $91 million from $89.5 million. The export balance rose to $26.5 million in February 1961 from $19.3 million in February last year; the January-February total rose to $75.7 million from $47 million.

Industrial Production.—Canada's seasonally adjusted index of industrial production (1949=100) rose to 165.8 in February from 165.5 in January. The increase in the durables output was widespread; all major groups, except non-ferrous metals, recorded gains. The most notable gains were recorded by primary iron and steel, motor vehicles, and telecommunication equipment.

The output of non-durables dropped slightly. Decreases were recorded for rubber products, printing, publishing and allied industries, clothing prdoucts, tobacco products, textile, chemicals and allied industries. These losses were partly offset by gains in foods and beverages, paper products, petroleum products, and leather products.

Agricultural Production.—Canada's index of physical volume of agricultural production (1935-39=100) is estimated at 156.2 for 1960, compared with 145.1 for 1959 and a five-year average of 148.8 for the 1955-59 period. An all-time high of 169.5 was achieved in 1956. A smaller livestock output in 1960 was more than offset by a larger output of grains, potatoes, tobacco and maple products.

Employment and Earnings.—Canada's composite index number of industrial employment (1949=100) dropped to 111.0 in February 1961 from 111.6 in January and 114.6 in February 1960. Seasonal influences were chiefly responsible for the decline; decreases occurred in forestry, construction, trade, transportation, storage and communication. Employment was higher than a year earlier in finance, insurance and real estate but about the same in non-durable goods manufacturing, public utility operation, trade and service.

As usual, average weekly wages and salaries rose between January and February. The industrial composite figure rose to $77.79 from $77.00. Average weekly wages and salaries rose $1 or more over the month in forestry, construction, public utility operation, transportation, storage and communication.

Personal Income.—Personal income of Canadians rose to about $27,442 million in 1960 from $26,319 million in 1959 and $24,702 million in 1958. The geographical distribution of personal income in the last four years was as follows:

	1960	1959	1958	1957
	— million dollars —			
Newfoundland	393	373	345	329
Prince Edward Island	100	93	85	76
Nova Scotia	851	814	761	721
New Brunswick	621	580	541	513
Quebec	6,684	6,404	6,065	5,742
Ontario	11,079	10,700	9,994	9,399
Manitoba	1,372	1,339	1,264	1,132
Saskatchewan	1,318	1,184	1,107	1,019
Alberta	2,018	1,958	1,851	1,660
British Columbia	2,901	2,782	2,613	2,527
Yukon and Northwest Territories	48	44	43	42
Foreign Countries[a]	57	48	33	31
Canada	**27,442**	**26,319**	**24,702**	**23,191**

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[a] Includes receipts of income of Canadians temporarily abroad, including pay and allowances of Canadian armed forces abroad.

Labor Income.—Canada's paid workers received about $1,501 million in February 1961 in the form of salaries and wages and supplementary labor income, compared with $1,494 million in January 1961 and $1,465 million in February 1960. In January-February labor income rose to $2,995 million in 1961 from $2,927 million in 1960. Labor income by region was as follows:

	Unadjusted					Seasonally Adjusted	
	Feb. 1961	Jan. 1961	Feb. 1960	January-February 1961	January-February 1960	Feb. 1961	Jan. 1961
Atlantic region	100	100	96	200	192	105	105
Quebec	386	383	375	769	749	401	398
Ontario	635	632	618	1,267	1,238	657	651
Prairie region	218	219	214	437	427	230	232
British Columbia	159	156	158	315	312	168	169
Canada	**1,501**	**1,494**	**1,465**	**2,995**	**2,927**	**1,563**	**1,556**

Wholesale Prices.—Canada's general wholesale price index (1935-39=100) moved up to 231.6 in February from 231.3 in January and 230.2 in February 1960. The textile products group rose to 232.6 in February from 230.3 in January, mainly because of higher prices for miscellaneous fibre products, raw cotton, domestic and imported raw wool, and rayon yarns. The iron products group index rose to 256.6 from 255.1, as a result of higher prices for scrap iron and steel.

The animal products group index rose to 259.6 from 258.5, chiefly because of higher prices for fishery products, cured meats, eggs, oils and fats, hides and skins, and dressed fowl. The vegetable products group index moved up to 201.6 from 201.2.

Consumer Prices.—The consumer price index has been revised and is now based on 1957 instead of 1947-48 expenditure patterns. The new C.P.I. rose to 129.1 in March from 128.9 in February. Rises in the housing and clothing indexes offset drops in the transportation, health and personal care, and recreation and reading indexes. The food, and tobacco and alcohol indexes were both unchanged.

Farm Prices.—The upward trend in the index of farm prices of agricultural products (1935-39=100) during the December-February period was reversed in March when the index dropped to 242.2 from 244.2 in February. Most of the increase is attributable to lower prices for livestock and potatoes.

Farm Cash Income.—Canadian farmers received about $2,783 million in 1960 from the sale of farm products, participation payments on previous years' grain crops, net cash advances on farm-stored grains, and deficiency payments under the farm prices support program. The corresponding total for 1959 was $2,789.3 million.

The largest reductions in farm cash income, in 1959 compared with 1960, were recorded for barley, flaxseed and hogs. The largest gains were recorded for wheat, potatoes, fruits, vegetables, tobacco, cattle and dairy products and from a marked increase in cash advances on farm-stored grains in western Canada.

In 1960 Prairie farmers also received about $77 million under the provisions of the Prairie Farm Assistance Act, the Western Grain Producers' Acreage Payment Plan and the Federal-Provincial Emergency Unthreshed Grain Assistance Policy. In 1959 they had received about $22 million, most of it under the provisions of the Prairie Farm Assistance Act. When these payments are added to other income, total cash returns to farmers from farming operations total $2,860.2 million in 1960 compared with $2,811.4 million in 1959.

Wheat.—Supplies of wheat remaining on or about March 1, 1961 in the four major wheat exporting countries for export and carryover at the end of their respective crop years totaled 2,603 million bushels, a seven per cent rise from the corresponding total of 2,442.8 million bushels a year earlier. March 1 supplies, in million bushels and with figures for 1960 in brackets, were as follows: United States, 1,658.6 (1,523.3); Canada, 699.8 (644.8); Argentina, 40.4 (125.2); and Australia, 204.2 (149.5).

Exports of wheat and wheat flour, in terms of wheat, from the four major wheat exporting countries, in the first seven months (August-February) of the current Canadian crop year rose to 677.8 million bushels from 526.6 million in the corresponding period of the previous crop year. Exports, in million bushels and with figures for August 1959-February 1960 in brackets, were as follows: United States, 364.6 (256.3); Canada, 177.4 (170.0); Argentina, 46.7 (31.0); and Australia, 89.1 (69.3).

Milk.—The milk output in March 1961 is estimated at 1,292 million pounds, which is about 2.6 per cent above the total for March 1960. The output for the first quarter of 1961 rose to 3,396 million pounds, which is 1.4 per cent above the total for the corresponding quarter of 1960.

Sales of fluid milk and cream, in milk equivalent, at 458.7 million pounds in February 1961, were one per cent below the total for February 1960. Sales in January-February 1961, at 937.6 million pounds, were the same as in the first two months of 1960.

TENANT FARMING IN THE DAVIDSON AREA OF SASKATCHEWAN

J. K. WIENS

The ownership of an economic farm unit is the cherished goal of many farm operators. Unfortunately, however, as the size of economic farm units increases farm operators, especially those with limited financial means, find it increasingly difficult to reach that goal.

Still, the operator who is chiefly concerned with an increase in the size of his farm may find means other than ownership to achieve this end. In Saskatchewan, for example, and here more than in any other province in Canada, this is generally done by leasing or renting land.

Extent of Tenant Farming in Saskatchewan.—Tenant farming in Canada is largely centered in the three western or prairie provinces. According to the 1956 census 77 per cent of the 575,015 farms in Canada were owner-operated, 6.2 per cent were operated by tenants, 15.8 per cent by part owners-part tenants and one per cent by managers.

The percentage of farms operated by tenants and part owners-part tenants ranged from 4.2 in Quebec to 4.7 in New Brunswick, 5.8 in Nova Scotia, 5.9 in Newfoundland, 8.6 in Prince Edward Island, 12.3 in British Columbia, 15.1 in Ontario, 30.2 in Manitoba, 38.3 in Alberta and 46.9 per cent in Saskatchewan.

The distribution of farms in Saskatchewan, according to tenure, varied between agricultural areas. Census divisions 5, 9, 10, 14, 15, 16, 17, and 18 are mostly in the park area; Nos. 6, 11, 12, and 13 are in the dark brown soil zone and Nos. 3, 4, and 8 in the brown soil zone. Assuming that these three groups of census divisions correspond to the three soil zones mentioned one may then say that 57 per cent of the farmers in the park area, 51 per cent of those in the dark brown soil zone and 44 per cent of those in the brown soil zone owned all their land.

Ten per cent of the farms in the park area, 15 per cent in the dark brown soil zone and 16 per cent in the brown soil zone were fully rented.

Owned farm land in Saskatchewan increased only from 65 per cent of total farm land in 1951 to 66 per cent in 1956. This increase is simply the result of an increase in the acreage of owned and occupied farm land since the acreage in leased or rented land was about the same in 1956 as in 1951. Some changes, however, occurred within each of the three soil zones. The acreage in leased or rented occupied farm land rose from 27 to 30 per cent in the park area, and decreased from 35 to 33 per cent in the dark brown soil zone and from 43 to 42 per cent in the brown soil zone. Rented land as a percentage of total occupied farm land decreased in all seven census divisions in the prairie area and increased in seven of the eight census divisions in the park area.

The 1959 phase of the Economics Division's study of "Changes in Farm Organization in Saskatchewan" pertained to changes on farms with medium textured soils in the dark brown soil zone and was centered in the Davidson area. As part of this study information on ownership and occupancy was collected for 23 townships in rural municipalities 222, 252, 253 and 282. Of the 582 farms in the area 42 per cent were owned, 42 per cent partly owned and partly rented and 16 per cent were rented (Table 1). Most of the 94 rented farm units ranged in size from two-quarter section units to four-quarter section units; they averaged 3.7 quarter sections per unit. The fully owned farms averaged 4.4 quarter sections per farm and the partly owned-partly rented farms averaged 7.1 quarter sections. The fully owned group of farms had the largest percentage, 25 per cent, of two-quarter section and smaller farms. The corresponding figures for the fully rented and the partly owned-partly rented farms were 20 and one per cent respectively.

Table 1.—Farm Size Distribution, According to Tenure, 582 Farms, R.Ms. Nos. 222, 252, 253, and 282, Saskatchewan, 1959

Farm size (number of quarter sections)	Owned	Rented	Partly owned-partly rented	Total	Per cent of total
	—number of farms—				
1	7	2	—	9	2
2	54	17	2	73	13
3	40	25	24	89	15
4	56	31	39	126	22
5	24	8	41	73	13
6	21	7	38	66	11
7	14	3	31	48	8
8	10	1	19	30	5
9	5	—	9	14	2
10	5	—	9	14	2
11	4	—	8	12	2
12	2	—	5	7	1
13 and over	2	—	19	21	4
Total	**244**	**94**	**244**	**582**	**100**
Per cent of total	42	16	42	100	
Average farm size (quarter section)	4.4	3.7	7.1		

If farmers with both owned and rented land had farmed only the land which they owned, their operated farm units would have been smaller than the fully owned farms in the area but larger than the fully rented farms. Forty per cent of these farms would have consisted of two-quarter section or smaller units and 59 per cent of three-quarter section or slightly smaller units. On the average these farms had four quarter-sections of owned land. The renting of additional land made it possible to increase the size of farm to an average of 7.1 quarter-sections per farm.

Rental Arrangements.—The enumerators interviewed 24 farmers who had rented land. Eleven had rented all and 13 had rented only a part of the land they were farming. As some farmers rented land from more than one landlord, detailed information was obtained for 39 different contracts or rental arrangements.

Type of Contract.—The most prevalent type of rental contract was a three-year written contract, with only an oral provision for renewal. Of the 39 contracts signed or orally agreed to, eight were for one year, one for two years, 21 for three years, and nine for an indefinite period. Thirty-one of these contracts were written contracts. Renewal arrangements were written for only eight contracts; the other 31 were made orally or forgotten about, the tenant continuing to rent the land if not told to discontinue doing so. Fourteen rental arrangements had been in force less than four years, 11 from five to 10 years, 10 from 11 to 19 and four over 20 years. The chief difference in arrangements, as far as farmers renting all their land and farmers renting only part of their land were concerned, was that contracts between landlords and farmers renting all their land were written contracts (15 of 16); more of these contracts (one half) than of those with farmers renting only part of their land had an option clause for the purchase of the land. In all, 14 of the 39 contracts carried a clause giving the tenant first opportunity to buy if the land became available for sale.

Landlords and Tenants.—The typical landlord lived in Saskatchewan, was related to or a personal friend of the tenant, was over 60 years of age, and had previously farmed the rented land. Fourteen landlords lived within the Davidson area, 11 lived outside the area but in Saskatchewan, five lived in another province, four in another North American country, one on another continent, three were corporate bodies and one was the Crown. Twenty-six landlords were related to or friends of the tenant. For seven of the contracts, when the tenant was neither a relative nor a close friend of the landlord, the tenant had contacted the landlord to rent the land; for the other six contracts the landlord had met with the tenant to discuss rental arrangements.

The enumerators were able to find the approximate age of 24 landlords. Three were under 50 years of age, five between 50 and 59, eight between 60 and 69, and eight over 70 years of age. Twenty-four landlords had farmed their land at one time and eight others had not done so (information not available for the other seven landlords). None of the landlords supervised the operation and management of the farm or gave financial assistance to the tenants.

The landlords did not prevent the tenants from farming other land or engaging in other occupations. In all but seven cases the tenant was allowed to make his own decisions as to rotation and cropping practices and in six of these seven cases the tenant's decision as to which crops to grow was made according to a stated summerfallow-crop rotation. Only four landlords made a periodical check of the growing crops. Twenty rental arrangements provided for rent by the tenant through the mail service, 14 for direct payment to the landlord and the other five for direct payment to the landlord's agent.

Fourteen of the 24 farmers interviewed had farmed before renting the land they were farming in 1959. Eight had worked under a rental contract before, four had done so twice and one had owned the land which he farmed before. The average length of these contracts was four years and the average area rented 2.2 quarter sections. Two part owners-part renters had ended their previous rental agreements because of better opportunities on their new farms; the agreements with the other seven part owners-part renters had been brought to an end by the landlords themselves. In one instance the land had been sold to another farmer despite a verbal agreement giving the tenant the first opportunity to purchase. Two of the contracts with farmers renting all their land had been ended by the landlords and nine by the tenants themselves.

The average size of farms operated by part owners-part renters was 6.3 quarter sections of which 2.3 quarter sections were owned and the other four rented. The full tenants farmed 3.8 quarter sections, on the average. Fifteen tenants said that their farms were large enough, but that they would prefer owning the land they farmed, even if the acreage were to be smaller. Six others wished to farm more land but were not too concerned about the comparative advantage of owning or renting land.

The reasons given for renting were many and varied. Twelve tenants did so because of the lack of money and another for a very much similar reason, the lack of credit. Eleven were tenants because they could not find good land selling at fair prices, four because they wished to help relatives, two because they considered tenancy less risky than ownership, two because the land they rented was of a type that made it convenient to add that land to the other land they were farming, two because of the prospect of eventually owning the rented land, and one because he was then able to use his waste land.

Comparisons.—Farmers renting only a part of their land had 7.8 per cent less of their acreage in wheat but 4.7 more in barley and 3.7 per cent more in summerfallow (Table 2).

Table 2.—Land Use by Type of Occupancy, 582 Farms, R.M. Nos. 222, 252, 253 and 282, Saskatchewan, 1959

	Farmers renting part of their farm			Farmers renting all their farm
	Owned	Rented	All	Rented
		—acres—		
Improved	282	509	791	561
Unimproved	81	120	201	54
Total area	363	629	992	615
		—per cent of improved land—		
Wheat	37.3	44.3	41.8	49.6
Flax	4.8	1.4	2.7	2.1
Oats	1.8	2.2	2.0	2.6
Barley	8.1	5.7	6.5	1.8
Summerfallow	47.2	46.0	46.5	42.8
Improved grass and yard	0.8	0.4	0.5	1.1
Total	**100.0**	**100.0**	**100.0**	**100.0**
		—per cent of unimproved land—		
Pasture	59.2	60.7	60.1	35.8
Hayland	4.5	3.0	3.6	2.9
Idle	36.3	36.3	36.3	61.3
Total	**100.0**	**100.0**	**100.0**	**100.0**

Of the 580 farms in the Davidson area a smaller proportion of fully owned than of other farms had cattle and hogs (Table 3). The partly owned-partly rented farms had more livestock per farm, on the average, than other farms. The average number of hogs per farm was about the same for all three groups of farms but, because of the smaller percentage of fully owned farms with hogs, the average number of hogs on farms with a hog enterprise was larger than for the two other groups of farms.

Twelve of the 24 farmers interviewed said that renting did not affect the organization of their farms, eight that they would seed different acreages of some crops if they owned the land, seven that they would have more or better buildings on their farms, three that they would have more livestock, and one that he would work his land better. Sixteen tenants did not see any real difficulty in carrying out their rental agreements, five were concerned with the lack of

Table 3.—Livestock Numbers on Farms According to Type of Tenure, 582 Farms, R.M. Nos. 222, 252, 253, and 282, Saskatchewan, 1959

	Owned	Rented	Partly owned-partly rented
Number of farms	244	94	244
Average number per farm of:			
Cattle	13.0	12.6	22.4
Hogs	8.1	6.6	8.0
Per cent of farms with:			
Cattle	56.6	68.5	70.2
Hogs	39.3	55.4	52.7

security in tenure arrangements and five said that the type of agreement they had made with the landlord was such as to lead to the neglect of the buildings or prevent the erection of convenient buildings.

Contract Terms.—According to 26 of the contracts the landlord received one-third of the groups produced and paid all taxes. Buildings, if any, were made available to the tenant without cost and the landlord paid for the materials purchased to repair these buildings. The other "one-third crop share" contracts provided for payment of part of the grain harvesting and hauling costs by the landlord. These 28 agreements may also be subgrouped as follows:

(1) six agreements specifying that taxes would be paid by the landlord.

(2) ten under which the landlord agreed to supply most or all of the required grain storage facilities and pay the taxes.

(3) four agreements with the same provisions as under (1) and (2) above; in addition, vacant farm buildings were available.

(4) eight agreements enabling the tenant to use the farm buildings.

On the average, the municipal assessment per cultivated acre was about the same for the farms operated under these four slightly different types of rental contracts—$12.26, $11.80, $11.28 and $11.69 respectively. The range within each of these groups, however, was quite extensive—$7.83 to $16.07, $5.17 to $15.23, $9.69 to $14.18 and $8.04 to $15.89 respectively.

Six contracts were of the "one-half crop share" type. The landlord either (a) paid the taxes, supplied half the seed, and provided grain storage facilities, (b) paid the taxes, supplied all the seed, and made the free use of a complete set of good farm buildings available to the tenant, or (c) paid half the custom rate for harvesting. Municipal assessment averaged $11.23 and ranged from $4.72 to $13.79 per cultivated acre.

Two "one-quarter crop share" contracts provided for the supply of grain storage facilities but not for the payment of taxes by the landlord. Municipal assessment averaged $11.27 and ranged from $6.76 to $15.58 per cultivated acre. The other three contracts provided for cash rentals for pasture land.

The value of the land and family relations between landlord and tenant were not associated with the terms of contracts.

Information on rental payments for land was secured from 322 farmers renting improved land in the 23 townships included in the study. Of these 322 farmers 312 were farming under crop share rental agreements and 10 under cash rental agreements. Of the 312 crop share agreements 263 were one-third and 29 one-half crop share agreements. The 29 others provided for a variety of ways of dividing the crops between landlord and tenant.

Table 4 is a descriptive summary of the returns secured by the tenants farming under a one-third crop share agreement, for their labor and management. This summary also depicts the relation between returns, type of soil, and size of farm. Obviously, as the table well illustrates, the better the soil the bigger the reward to the tenant for his labor and management.

Operating costs do not vary greatly, according to soil types, but yields are usually higher on the heavier soils. For farms of the same size returns to labor and management were the highest on farms with Sceptre heavy clay soils and farms with Regina heavy clay soils; the next highest yields were on farms with Haverhill loam soils and the third highest yields on farms with Weyburn loam soils. Two-quarter section farms with Haverhill loam soils had higher returns than two-quarter section farms with Regina heavy clay soils; the former group of farms had the advantage of being able to find an additional source of income in a livestock enterprise.

Table 4.—Returns to Tenant by Size of Farm Rented, Soil Type and Facilities Provided by Landlord, According to Average Yields in the 1950-59, 1940-59 and 1920-59 Periods[a]

Soil Type	Size of farm quarters	Buildings supplied by tenant			Buildings supplied by landowners [b]		
		—period, yield levels [c]—					
		1950-59	1940-59	1920-59	1950-59	1940-59	1920-59
		—dollars—					
Weyburn loam	2	112	−215	−461	251	−76	−332
	4	1,109	476	2	1,377	744	270
	8–12	3,972	2,478	1,358	4,417	2,923	1,803
Regina heavy clay	2	635	166	−142	870	401	93
	4	2,386	1,471	871	2,652	1,737	1,137
	8–12	6,681	4,540	3,138	7,292	5,151	3,749
Haverhill loam	2	1,054	500	186	1,444	890	576
	4	2,270	1,158	526	2,868	1,643	1,011
	8–12	5,157	2,928	1,662	5,923	3,694	2,428
Sceptre heavy clay	2	1,508	797	416	1,733	1,022	641
	4	3,389	1,955	1,189	3,697	2,263	1,497
	8–12	8,020	5,069	3,460	8,515	5,444	3,955

[a] Based on one-third share rental agreements and data from studies of *Changes in Farm Organization.*

[b] Cost of buildings based on data from studies of *Changes in Farm Organization.*

[c] Based on yields quoted by the Provincial Secretary of Statistics for individual municipalities representing each soil type.

Table 5 shows the differences in returns to capital to the landowner when he leases the land with buildings and when he leases the land only, according to different yield levels and soil types. When he supplies the land with buildings, according to a one-third crop share agreement, his returns range from eight per cent on Regina heavy clay soils to 15.9 per cent on Haverhill loam soils (assuming that yields are equivalent to the average for the 1950-59 period).

The longer the period used in our calculations of average yields the lower the returns on investment and the narrower the differences in average returns between soil groups.

Summary.—Farm tenancy is more widespread in Saskatchewan than in any other province in Canada. The 1956 census reports that 46.9 per cent of the

Table 5.—Returns to Landlord's Investment Under Modal Rental Arrangements by Soil Type and Facilities, According to Average Yields in the 1950-59, 1940-59, and 1920-59 Periods

Soil type	Buildings supplied by tenant			Buildings supplied by landowners [a]		
	—period yield level [b]—					
	1950-59	1940-59	1920-59	1950-59	1940-59	1920-59
Weyburn loam	13.7	11.8	10.5	11.5	9.9	8.7
Regina heavy clay	8.0	6.8	6.0	7.0	5.9	5.2
Haverhill loam	15.9	12.4	10.4	11.0	8.2	6.6
Sceptre heavy clay	11.6	9.0	7.5	10.0	7.5	6.2

[a] Cost of buildings based on data from studies of *Changes in Farm Organization.*

[b] Based on yields quoted by the Provincial Secretary of Statistics for individual municipalities representing each soil type.

farms and 34 per cent of the occupied farm land in that province were then operated by tenants. Renting makes it possible for many farmers to build up their farms to an "economic" size.

Renting, however, seems to have little influence on the types of land use. Our study of farm tenancy in the Davidson area indicated a slightly higher percentage of the improved land seeded to wheat, on rented than on other farms, but a smaller proportion in flax and coarse grains.

Most of the rental agreements were written three-year contracts and most of these contracts were of the one-third crop share type.

The chief reasons given by tenants for renting land were the lack of money and the high prices of good land.

Returns to tenants, for their labor and management, were generally higher on farms with heavy clay soils than on farms with loam soils. Returns to landlords' capital, on the other hand, were generally higher on loam than on heavy clay soils.

A STUDY OF SMALL FARMS IN THE ROSETOWN-ELROSE AREA OF WEST CENTRAL SASKATCHEWAN

J. ZEMAN

The total number of farms in Saskatchewan has been decreasing during the last two decades, the number of large farms increasing while that of small farms was decreasing. As it takes a few small farms to make one large farm, the total number of farms has decreased.

It is not at all easy to define a "small farm." For the purposes of this article, however, we shall content ourselves with acreage, as a measure of size, and classify as small all one-half section farms. An American agricultural economist has defined it as "a farm which cannot do the following things, because of inadequate size: (1) Keep the operator and his family usefully employed, (2) Give them a reasonably good living, and (3) Support modern equipment to enable profitable farming methods."[1]

Nonetheless, Motheral's definition does not lose any of its relevance, even for our own immediate and restricted purposes. Indeed, we made some attempt to determine what adjustments half section farm operators were making, or had made, to persist as operators of these farms. If adjustments were not made, it is quite likely that the number of small farms would be even smaller. Some small farm operators have gradually decreased the size of their units and will eventually retire from farming. Others are only starting as farm operators but hope to be able to expand and improve their acreage. Still others have intensified their operations or supplemented their income with off-farm employment. These are cases where some success has been achieved or may be hoped for. Unfortunately, there remain others who still contribute to what is often referred to as "the small farm problem."

Since 1954 the Economics Division has conducted, in Saskatchewan, a series of farm organization studies. The intent was to include large, medium and small farms in each study but, owing to difficulties in obtaining a fairly large and homogeneous sample of small farms, the researcher often found himself devoid of the tools needed to grapple with the small farm problem.

In the fall of 1959, a complete reconnaissance was made of the Rural Municipalities of Monet No. 257, and St. Andrew's No. 287, in the heart of a high productivity, grain-growing district, the Rosetown-Elrose area of west central Saskatchewan. These two municipalities are generally considered as being part of an area where large farms predominate. However, the rather startling fact was that nearly one-fifth of the farms were one-half section or less in size, nearly one-third were three-quarter section or less, and over one half were one section or less.

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[1] Motheral, Joe R. "The Small Farm is Doomed. . . .", *Farm Policy Forum*. Ames, Iowa. February 1953.

The number of small farms was large enough to warrant a special study of these farms. Our sample included 34 farms which we divided into three groups as follows: group I, including nine farms where income was derived from livestock as well as from grain; group II, made up of 16 farms which secured less than $2,000 from sources other than sales of grain and livestock; and group III, comprising nine farms where more than $2,000 were earned from sources other than sales of grain and livestock.

The first group was selected because of its livestock enterprises in an area generally considered as specializing in grain farming, the second because it provided an opportunity to measure the income that could be realized from straight grain farming and the third because it made it possible to estimate the size of income from off-farm employment.

Land Use.—Table 1(a) describes the average land use for the current crop year. The farms in the sample are characterized by a high degree of arability, the cultivated area and the farmstead accounting for about 99 per cent of the total area. Wheat is the main crop consistently grown on these farms. Durum wheat, barley, and flax are important crops. In 1960, the acreage in flax was quite significant on farms of all sizes. Oats, rape and safflower were of less importance.

Table 1(b) compares the crop acreages on small, medium and large farms.

Table 1(c) provides a comparative picture of land use between 1954 and 1960. Some of the changes are rather significant, such as the decrease in wheat acreage and the increase in flax acreage.

Table 1(d) gives a historical picture of wheat, barley and oats yields in the area. Yields have been high for the immediate ten-year period, which led to wheat surpluses. Many farmers have grown durum wheat, barley and flax to alleviate the situation.

Farm Capital.—The capital structure of the farms is described in Table 2 (investment in land is for owned land only). Seven farmers did not own the land they farmed and two others owned one-quarter and rented one-quarter section. The rented land represented an average investment (for the complete sample) of $4,526 per farm. The investment value was computed at two and one-half times the assessed value. This formula provided a value which was comparatively close to the known sales value of some parcels of land which had been sold in the district in recent years.

Building values were based on depreciated replacement costs (the value of the house was not included). The value of buildings on rented land was not included. As these were mainly grain farms, in many cases there was no barn on the farm. The value of buildings in a comparable study,[1] in the Davidson area of Saskatchewan, was only $902 per farm.

The average investment in machinery was $5,227 per farm, as compared with $4,752 in the Davidson study. The average age of tractors was 12 years. Four farmers did not own a tractor but borrowed one from a relative. Twenty-one farmers had a full or part interest in a combine. These combines were 13 years old, on the average, and ranged from one to 22 years. Thirty-one farmers each owned a truck, 25 owned a car and one did not own either but

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[1] Wiens, J. K. *A Study of Small Farms in the Davidson Area of Central Saskatchewan.* The Economic Annalist, August 1960.

Table 1(a).—Average Land Use, 34 Selected Small Farms, Rosetown-Elrose Area West Central Saskatchewan, 1960

	Group						All farms	
	I		II		III			
	Acres	Per cent of total	Acres	Per cent of total	Acres	Per cent of total	Acres	Per cent of total
Wheat	130	41	127	40	126	40	128	40
Oats	9	3	2	1	6	2	5	2
Barley	22	7	10	3	6	2	12	4
Flax	38	12	36	11	61	19	43	13
Summerfallow	109	34	133	42	113	36	121	38
Improved pasture	5	2	1	1	1	....	2	1
Total improved land	313	99	309	98	313	99	311	98
Farmstead	4	1	4	1	3	1	4	1
Idle, unimproved land	....	....	4	1	....	....	2	1
Total assessed acres	**317**	**100**	**317**	**100**	**316**	**100**	**317**	**100**

Table 1(b).—Average Land Use, 34 Small, 25 Medium and 25 Large Farms, Rosetown-Elrose Area of West Central Saskatchewan, 1960

	Small farms		Medium farms		Large farms	
	Acres	Per cent of total	Acres	Per cent of total	Acres	Per cent of total
Wheat	128	40	234	37	339	32
Oats	5	2	17	3	38	4
Barley	12	4	36	6	68	6
Flax	43	13	104	16	167	16
Summerfallow	121	38	227	36	425	40
Improved pasture	2	1	2	....	....	....
Total improved land	311	98	620	98	1,037	98
Farmstead	4	1	4	....	4	....
Idle, unimproved land	2	1	11	2	17	2
Total assessed acres	317	100	635	100	1,058	100
Number of farms	34		25		25	

Table 1(c).—Comparison of Land Use on Selected Small Farms on Regina Heavy Clay Soils, Rosetown-Elrose Area of West Central Saskatchewan, 1954 and 1960

	1954		1960	
	No. of acres	Per cent of cropland	No. of acres	Per cent of cropland
Wheat	158.2	51.0	127.6	41.0
Barley	8.3	2.7	12.1	3.9
Oats	3.9	1.3	5.0	1.6
Flax	4.0	1.3	43.3	13.9
Improved pasture	2.2	0.7	1.8	0.6
Summerfallow	133.2	43.0	121.3	39.0
Total cropland	309.8	100.0	311.1	100.0
Total acres	317.4		316.7	
Number of farms	20		34	

had the use of a car. The average age of trucks was 12 years, and that of cars seven years. Only one farmer had bought a tractor (second hand) during the current year, and only four had bought tractors (one new, three second hand) during the 1956-60 five-year period. Seemingly, it was a common practice to buy second hand rather than new power machinery, cars, and trucks.

Table 1(d).—Average Yields[a], Wheat, Oats and Barley on Small Farms, Rosetown-Elrose Area of West Central Saskatchewan, 1960

Period	Wheat			Oats			Barley		
	R.M. 257	Number 287	Average	R.M. 257	Number 287	Average	R.M. 257	Number 287	Average
1920–29	21.0	20.8	20.9	39.3	37.1	38.2	21.4	28.8	25.1
1930–39	10.6	12.8	11.7	22.9	27.7	25.3	13.6	18.4	16.0
1940–49	15.7	17.8	16.8	31.6	31.9	31.8	20.7	23.8	22.3
1950–59	21.3	23.5	22.4	40.5	44.9	42.7	33.6	34.0	33.8
1920–59	17.1	18.7	17.9	33.6	35.4	34.5	22.3	26.2	24.3
1960	20.6	22.9	22.2	b	b	36.6	b	b	19.7

[a] 1960 averages compiles from the 34 farm records; all others calculated from data supplied by the Provincial Secretary of Statistics.

[b] Only a few farmers grew these crops.

Table 2.—Average Capital Structure, 34 Selected Small Farms, Rosetown-Elrose Area of West Central Saskatchewan, 1960

	Group			All farms
	I	II	III	
	— dollars —			
Land	14,736	13,023	14,806	13,949
Buildings	2,098	1,689	1,958	1,868
Machinery	6,155	4,291	5,963	5,227
Livestock	1,584	68	....	451
Total	**24,573**	**19,071**	**22,727**	**21,495**

Table 3.—Average Indebtedness per Farm, 34 Selected Small Farms, Rosetown-Elrose Area of West Central Saskatchewan, 1960

	Group			All farms
	I	II	III	
	— dollars —			
Long-term	3,010	762	1,056	1,435
Intermediate-term	322	126	692	328
Short-term	....	16	....	7
Total debts	**3,332**	**904**	**1,748**	**1,770**

Twelve farms had livestock but three of these farms did not derive any cash income from livestock. Thus, the average investment in livestock was only $451 per farm in the sample, compared with $941 per farm in the Davidson area where 17 out of 30 farmers had livestock.

The total average investment per farm in land, buildings, machinery, and livestock was $21,495, compared with $12,988 in the Davidson area where the investment on land was $7,556 smaller.

The value of rented land averaged $4,526 per farm. If we added this figure to that for owned investment the figure for total investment would then be a little over $26,000.

Farm Debts.—Information on debts was enumerated on the basis of the period over which the debt was repayable (Table 3). Short-term debts were to be repaid within a year and included such items as taxes, lumber, fuel and store bills. Intermediate-term debts were to be settled in a one to three-year period and were incurred mainly for the purchase of machinery and equipment. Long-term debts were incurred usually for the purchase of land and were repayable over a fairly lengthy period.

Of the 34 farmers in the sample, 17 were free of debts. Only one farmer had a short-term debt. Current charge accounts, paid on a monthly or seasonal basis, were not considered as debts. Eleven farmers had intermediate-term debts and nine had long-term contracts.

The asset-debt ratio was 12 to one on the average. One may very well say that this ratio was even lower since some of the debts were debts contracted under father-son agreements, some of which will be eventually written off.

Farm Receipts.—The income from grain and livestock includes potential cash sales of grain, actual cash sales of livestock and changes in inventory but does not include the value of livestock and livestock products consumed by the farm family.

The value of products produced for home consumption is quite difficult to obtain and is not included. Perhaps in this study it is not too important as only 12 farms had any livestock. The value of home-produced meat averaged $28 per farm (it was not included as a receipt).

In group I (farms with livestock), 18.9 per cent of the receipts were from livestock, 68.6 per cent from grain, and 12.5 per cent from other sources. In group II (farms with other income less than $2,000), 83.1 per cent of the receipts were from grain and 16.9 per cent from other sources. In group III (farms with other income exceeding $2,000), 62.1 per cent were from grain and 37.9 per cent from other sources.

Farms in group II had lower total receipts, lower receipts from grain, and lower "other receipts" than farms in the other two groups (Table 4).

Farm Expenses.—Farm expenses were divided into two parts—cash expenses and depreciation costs. The bulk of the cash expenses were incurred for machine and equipment operations. Cash expenses for this purpose, which included fuel, oil, grease, repairs, tires, blacksmith bills, small hardware, insurance and license averaged $1,859 per farm. Total costs for car and truck operation were included in these figures, as any estimate of farm use and personal use is an arbitrary one. Taxes are another important item, as the area is one where land bears a high assessment. Average expenses were $443 higher, per farm, than in the Davidson area.

Depreciation was calculated at the same rates used in studies of changes in farm organization, i.e., on replacement costs according to a straight line method, based on the estimated life of each type of machine. (For detailed information on farm expenses, see Table 4.)

Table 4.—Average Receipts and Expenses, 34 Selected Small Farms, Rosetown-Elrose Area of West Central Saskatchewan, 1960

	Group			All farms	Davidson area, 1959. All farms
	I	II	III		
Receipts					
Farm:					
Grain	4,590	3,834	5,113	4,373	2,207
Livestock	1,336	....	....	354	915
Subtotal	5,926	3,834	5,113	4,727	3,122
				PFAA	117
Acreage payments	200	200	200	200	195
Custom work	208	111	14	111	18
Subtotal	408	311	214	311	330
Total farm receipts	**6,334**	**4,145**	**5,327**	**5,038**	**3,452**
Other Income:					
Off-farm income	384	277	2,739	956	[a]
Family allowance	93	50	120	80	62
Old age pension	....	206	293	175	48
Expenses					
Cash:					
Taxes	341	310	362	332	186
Other real estate	79	114	149	114	33
Crop	178	132	165	153	68
Equipment	756	752	980	814	586
Custom work	91	228	209	187	161
Livestock	583	6	....	157	363
Other expenses	77	84	43	71	16
Labor	26	21	55	31	4
Total Cash Expense	**2,131**	**1,647**	**1,963**	**1,859**	**1,417**
Depreciation:					
Buildings	93	86	83	87	49
Machinery	1,021	654	879	811	671
Total depreciation	**1,114**	**740**	**962**	**898**	**720**
Interest	1,228	954	1,136	1,075	649
Total Farm Cost	4,473	3,341	4,061	3,832	2,786
Total Farm Income less Cash Expenses	4,203	2,498	3,364	3,179	2,035
Return to Operator's Labor and Capital	3,089	1,758	2,402	2,281	1,315
Return to Operator's Labor	1,861	804	1,266	1,206	666

[a] Income from such investments as bonds, farm rental income and the operation of another business was not included.

Table 5.—Distribution of Labor and Capital Income by Farm Groups, 34 Selected Small Farms, Rosetown-Elrose Area of West Saskatchewan, 1960

Income group	Group			All farms
	I	II	III	
— dollars —	— number —			
−1000 to −1	....	1	....	1
0 to 999	....	4	3	7
1000 to 1999	2	3	1	6
2000 to 2999	3	6	1	10
3000 to 3999	1	2	2	5
4000 to 4999	3	....	2	5

Table 6.—Distribution of Labor Income by Farm Groups, 34 Selected Small Farms, Rosetown-Elrose Area of West Central Saskatchewan, 1960

Income group	Group			All farms
	I	II	III	
— dollars —	— number —			
−2000 to −1001			1	1
−1000 to −1	1	3	1	5
0 to 999	1	7	2	10
1000 to 1999	3	3	2	8
2000 to 2999	2	3	1	6
3000 to 3999	2		2	4

Farm Income.—Many of the 34 farmers depended on income other than income directly realized from farm operations. Various measures can be used to portray the success of a farmer, one of which is his income. In our analysis, we measured income in three different ways. First, we only deducted cash expenses from total farm receipts; interest charges on debts and depreciation were not considered. This method gave a net surplus ranging from a low level of $906 to one of $5,526 per farm.

Returns to operator's labor and capital were our second measure of income. These returns were the amounts available from farming operations, in 1960, for living costs and for the servicing of debts or capital accumulation, once a farmer had paid for all his farm operating expenses and allowed the proper amount for the depreciation of his equipment.

Labor income was the third measure; this income is a residual return to the operator for his own labor and management after all expenses, including operating expenses, depreciation allowance and a return of five per cent on all his farm investment have been deducted. (For detailed information on farm income, see Table 4.)

There was a wide range in the distribution of labor and capital income (Table 5) and labor income (Table 6). Returns to labor and capital ranged from a deficit of $277 to a high return of $4,936. Average returns totaled $2,281 per farm; 17 farmers had higher and the 17 others had lower returns than this average. Labor income averaged $1,206 per farm and ranged from a deficit of $1,106 to a high return of $3,509; 16 farmers had labor returns below the average of $1,206 and the 18 others had returns exceeding that average.

THE PRESENT-DAY AGRICULTURAL LADDER

Helen C. Abell

Observers of rural life have described the phases leading from childhood on a farm to eventual farm ownership and operation as the agricultural ladder. In the past it was said to consist of three steps or phases. The first step was reached when the sons left school and worked with their fathers on the farm, either with or without an agreed-on wage or other form of compensation.

During the second phase most Canadian farm boys left their fathers' farms to earn the money needed to acquire their own farms. Many boys "hired out" to other farmers for cash wages, some boys left farming for a few years and secured unskilled or semi-skilled work in such primary industries as lumbering, mining or fishing. The strong desire to mature out of this second phase stemmed not only from the ambition to become independent farm operators but also from the ambition to marry and establish a home and family.

Some boys completely bypassed this second step. These were the sons who stayed on the farm with their fathers and eventually inherited the family farm.

The third step on the idealized agricultural ladder was the final one of becoming an independent farmer operating his own farm and raising a family.

This was the traditional agricultural ladder of past generations. It was climbed by hundreds of thousands of Canadian men in the early days of our nation but has been used by a steadily decreasing number of farm-born youth in the last few generations.

A 1959 study of 352 Ontario farm families[1] gives us some rather startling information on what is happening to the traditional ladder. Of 10 adult sons of today's farmers, only four were farming in 1959, at some phase of the agricultural ladder. The steps they are climbing or the phases through which they are passing do not always resemble the steps or phases of old.

Occupation of Adult Sons of Ontario Farm Operators.—Most of the adult sons of present-day farmers were engaged in non-farm occupations. Only 40 per cent were farming, at any stage of the agricultural ladder, at the time of the study and there were indications that this proportion was not apt to change very much, at least in the near future.

Whether they live with their parents or have left home these sons have settled into the general type of occupation in which they intend to remain.[2] These general types of occupations and the residential location of the adult sons of these Ontario farm families are shown in Table 1.

These farm families are representative of many thousands of families and farms in the province of Ontario and elsewhere in Canada. On this basis it may be estimated that of every 10 adult sons of farm families, four sons are now living on farms and are occupied either fully or part-time in farming operations; two sons live on farms but are earning a living in non-farm occupations, which is most usually non-skilled work; four sons live in an urban area and are engaged in various types of non-farm occupations—the most common being unskilled work, professional or managerial positions and clerical or sales work.[3]

Why Some Sons Chose the Agricultural Ladder.—The respondents were asked to state and explain the underlying reasons for their adult children's choice of occupation.

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[1] Special Study of Ontario Farm Homes and Homemakers, 1959. A co-operative study by the Canada and the Ontario Departments of Agriculture. Information was gathered, by personal interviews, from 352 Ontario farm homemakers residing in each and every county and district in the province.

[2] Among the 22 sons who had expressed a definite intention of changing their occupations only six had mentioned a job change that concerned farming. Four intended to become full time farmers; one of these was a motel operator at the time of the survey and three were combining farming with some type of off-farm work. Two intended to leave farming for full time non-farm work; one of these was a full time farmer who wished to leave farming for clerical work. The other was combining farming with a non-farm job and intended to discontinue farming.

[3] For purposes of comparison it was noted that of 182 adult daughters from these same 352 Ontario farm families, about three of every 10 (or 34 per cent) were living at a rural address (17 per cent in their parents' homes and 17 per cent married and living on other farms in Ontario). About seven of every 10 (or 66 per cent) were living at an urban address (57 per cent in Ontario, seven per cent in another province of Canada, one per cent in the United States and one per cent abroad).

About one half (51 per cent) of these 182 adult daughters were married with no paid employment; 19 per cent were either teaching school, nursing or in other professions, 19 per cent were either doing clerical work in an office or clerking in a store, six per cent were in unskilled or semi-skilled occupations; two per cent were in a service occupation (hairdressing or helping with housework in the home of their parents) and one per cent in transition between leaving school and receiving some kind of paid employment.

There is little doubt that, for many of the 365 adult sons and daughters, reasons other than those known to their mothers affected their occupational choice. However it is worth noting that for those 73 adult sons engaged full or part-time in farming, factors other than personal interest were recognized to have as much influence as this traditional motive alone.

According to the mothers slightly more than half (54 per cent) of their sons were occupied as farmers purely from personal choice. Eight per cent were farming for this reason and also because they were able to combine farming with a non-farm job to supplement their incomes.

About one-quarter (23 per cent) of the sons were farming because their occupational choice was limited to this work. Underlying reasons were given in such terms as: "He grew up to be a farmer", "he wouldn't finish school so has not enough education for any other work", "he wants to live at home", "we needed him on the farm", etc.

Table 1.—Occupation and Residential Location of Adult Sons of 352 Ontario Farm Families, July 1959

Occupation	Farm residence			Urban residence (city, town or village)				All adult sons	
	Living with parents	On a separate farm[a]	All sons	In Ontario	Another Canadian province	Outside of Canada[b]	All sons	Number	Per cent
	— number of sons —								
Non-Farm Work			*37*				*73*	*110*	*60*
Unskilled	16	3	19	22	2	0	24	43	24
Semi-skilled	4	1	5	4	2	1	7	12	7
Skilled	4	3	7	6	0	1	7	14	8
Professional, managerial or official	1	0	1	12	1	3	16	17	9
Clerical or sales	3	0	3	11	0	1	12	15	8
Armed services	0	0	0	2	3	1	6	6	3
In transition (just out of school)	2	0	2	0	0	0	0	2	1
Type of work not known	0	0	0	0	1	0	1	1	[c]
Farm Work			*73*				*0*	*73*	*40*
Full-time farming	38	21	59	0	0	0	0	59	32
Farming and unskilled non-farm work	11	3	14	0	0	0	0	14	8
Sub-totals	79	31		57	9	7			
Totals			**110**				**73**	**183**	**100**

[a] Of these 31 sons all except two were living on a farm in Ontario. One of these two was farming full time as a hired worker on a farm in Nova Scotia. The other was a self-employed farm operator in Saskatchewan.

[b] Of these seven sons, four were in the United States of America, one in semi-skilled work, one in skilled work, one in a managerial position and one in sales work. Of the three sons who were abroad one was in the Navy with no fixed address, one was a professional agriculturalist (soils expert) in Ceylon and one was a missionary in South Africa.

[c] Less than one per cent.

Ten per cent were farming because of economic pressures. This was expressed in such terms as "he couldn't find any other work", "he had to have some sort of job", "he can save more money on the farm".

A few sons (five per cent) were farming because they had the opportunity of either securing a farm for themselves or of farming on their parents' farms with the understanding that they would eventually inherit the farms.

Recognition of the nature and role of these personal motivations and external circumstances helps to explain the findings in this study that: (a) these farmers' sons now on the agricultural ladder have emerged from all parts of Ontario with some evidence that farm families in the southern and western areas have proportionately more sons engaged in farming than have families in eastern or northern Ontario; central Ontario has the smallest number, and

(b) those farmers' sons now on the agricultural ladder were reared on farms where the volume of farm business ranged from very low to very high, with corresponding variations in the levels of living in the parental homes.[1]

Some Characteristics of Today's Agricultural Ladder.—A span of about 17 years in age and the responsibilities of a wife and family distinguish those farmers' sons who have reached the final step on the agricultural ladder from those who are at the beginning or of their climb.

There is little variation from an average of about nine years of formal education between young men at any stage of the agricultural ladder, with one noticeable exception. The few who are working as hired men on non-parental farms have completed an average of seven years of schooling.

An indication of the proportion of young men at various steps up the agricultural ladder and some characteristics of each step are presented in Table 2.

Summary.—

1. Less than half of the adult sons of 352 present-day Ontario farm operators are now engaged either full time or part time as farmers. The 352 farm families reported that only 73 of 183 adult sons were occupied in farming. This means a reproduction rate of one farmer from each five farm families.[2]
2. Of each 10 adult sons four live on farms and are engaged either full time or part time in farming operations, four live in urban areas and are engaged in various types of work—the most to least common being unskilled labor, professional or managerial positions and clerical or sales work—two live on farms but earn a living in unskilled non-farm jobs.
3. The reasons for choosing farming as an occupation were given as: personal choice alone or personal choice in combination with the opportunity of supplementing income with some sort of non-farm work, limitations on the possible occupations open to the sons, and for a few young men farming was considered an opportunity with eventual ownership of their parents farm as the goal.
4. The traditional agricultural ladder is still being used but considerable variation exists in the intermediate steps used to ascend from the bottom to the top. It takes about 17 years for young men to climb this ladder and most of this time is spent working with or for their own fathers on the parental farm.

About one-quarter (27 per cent) of the sons are on the first step of the ladder. They are unmarried and live with their parents and work on their families' farms. One of each three is in his late teen-age years and works without any regular cash wages; the others are in their early twenties and receive wages from their fathers.

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[1] Regardless of the parental families' level of living or the volume of farm business, some sons are continuing the occupation of their fathers. However, two types of parental farms seem to be producing disproportionate numbers of farming sons. These are: (*a*) the parental farms that have a high level of living and a high volume of farm business (23 per cent of the young men now on the agricultural ladder are from these parental farms), and (*b*) those that have a low level of living and a low volume of farm business (17 per cent of the young men now on the agricultural ladder are from these parental homes).

[2] Of the 352 families in this study only 60 had one or more adult sons actively engaged in farming (either full or part time) in 1959.

Table 2.—Some Characteristics of the Present-Day Agricultural Ladder as Exemplified by Sons Now Occupied as Farmers, July 1959

	Age	Years of formal schooling	Marital status	Farmers' sons	
				Number	Per cent
	— average —				
Third or Final Step on Ladder					
Self-employed full-time operators of their own farms, with intention to remain in this occupation	35	9.3	Married	18	25
Mid-Way on Agricultural Ladder					
Considered self-employed by parents but are farming property of parents who are still actively farming and/or directing farm operations (These sons are approaching the final step)	30	9.4	Married	19	26
Sons live away from parental farm, are occupied as farmers and also have some type of unskilled non-farm job (These sons may never go beyond this step)	39	9.0	Married	3	4
Sons live away from parental farm and work for wages on a non-parental farm (All considered permanently in this work; therefore, little likelihood of going beyond this step)	31	7.0	Married	3	4
Sons live on parental farm and are occupied as farmers and also have some type of unskilled or semi-skilled non-farm job (Most of these have no plans to change this arrangement but a few want full-time farming as an occupation and some wish to do full-time non-farm work and leave farming)	29	9.2	Single	10	14
Starting on Agricultural Ladder					
Sons live and work for wages on parental farm (Most of these men have no plans to change occupations. Many may stay on parental farm until they reach the final step of self-employed ownership on the retirement or death of their fathers)	23	9.5	Single	13	18
Sons live on parental farm where they work without any cash wage or salary (None had any plans to change this arrangement at the time of the survey)	18	8.9	Single	7	9
Average for all "farming" sons	29 years of age	9.2 grades of schooling completed	Total	73	100

About half (48 per cent) of the sons are midway on the agricultural ladder. Four different modifications of this intermediate step seem to be identifiable. These four modifications are:

(1) Unmarried men in their late twenties who are living with their parents and working on their parents' farm as well as at some type of unskilled non-farm work. This particular group (14 per cent of the farming sons) averaged 29 years of age. They seemed to have developed a fairly permanent occupational pattern at this stage of their lives and are likely to move to the top of the agricultural ladder.

(2) Married sons in their early thirties who have left the parental farm and work for wages on a non-parental farm. The average educational level of

these men is seven years of schooling. There is little likelihood that these men will leave this midpoint on the agricultural ladder. Only four per cent of the sons were in this category.

(3) Married sons in their late thirties who have left the parental farm and are doing some farming as well as some type of unskilled non-farm work. It is debatable whether these small groups of men (four per cent) will go beyond this midpoint.

(4) Most of the sons at the intermediate steps on the agricultural ladder (26 per cent of the farming sons) are married men, about 30 years of age, who live on their parents' farms and work there full time as farmers. These men were considered to be self-employed by their parents but have not yet reached the final step of farm ownership.

One-quarter of the sons (25 per cent) had reached the top of the agricultural ladder. These men averaged 35 years of age and had completed an average of nine years of formal education. They were married and lived on their own farms where they were full time self-employed farm operators.

UNITED NATIONS PUBLICATION

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

In Canada: The Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal 34.

Special Study on Economic Conditions in Non-Self-Governing Territories. New York. 1960. pp. V + 42.

Chapter 1 of this volume summarizes a special report on economic development prepared by the Committee on Information for Non-Self-Governing Territories and submitted to the fifteenth session of the General Assembly. The specific matters considered are: terms of trade, balance of payments with metropolitan countries, currency and central banking, transition from subsistence to market agriculture, productivity of labor, and association of certain non-self-governing territories with the European Economic Community.

The remaining chapters contain the studies on economic conditions in these territories prepared by the Committee on the basis of information sent to the Secretary-General of the U.N. from 1957 to 1960. These reports deal with: The Influence of Terms of Trade on the Economy of Non-Self-Governing Territories; Money and Central Banking System; Balance of Payments of Non-Self-Governing Territories with the Respective Metropolitan Countries; Productivity; and The Transition from Subsistence to Market Agriculture.

OTHER PUBLICATIONS

Canadian Economic Policy. Brewis, T. N., H. E. English, Anthony Scott, and Pauline Jewell. The Macmillan Company of Canada Limited. Toronto. 1961. pp. XV+365.

This study, by three economists and a political scientist, is organized on the premise that "Probably the most generally accepted political goals in Canada are the maintenance of national identity and the guarantee of freedom and justice for the individual. Economic policies play a large part in the promotion of these ends, indeed so large a role that they sometimes become intermediate ends themselves."

The authors complain of three chief difficulties in any study of over-all Canadian economic policy: (1) the size of the task itself; (2) the paucity of published data on certain aspects of policy and the over-abundance of data on other aspects; and (3) the diversity in origins of various policies and the imperfect co-ordination of these policies. Despite these handicaps they succeed in presenting the reader with a coherent review, analysis and critique of existing policies.

In Part I, *Resource Allocation and Government Policy,* they consider the "implications of government policy for consumer sovereignty" and, in particular, of its effects on competition and on the allocation of resources. In Part II, *Economic Stability and Government Policy,* they are concerned with problems of full employment, price stability, and high levels and steady flows of national income. T. N. Brewis, the writer of this part of the study, attacks these problems under the following chapter headings: *Employment Policy; Economic Forecasting; Monetary Policy;* and *Fiscal Policy.*

Part III, *Economic Welfare and International Aspects of Policy,* revolves around policies designed to provide optimum material welfare while making it possible to reach "the goal of equality of opportunity, and discusses the impact of external influences on the Canadian economy as well as some of the features of our international economic policy."

Part IV delves into *Policy Formation,* one chapter being especially concerned with *Economic Analysis and Policy*—the effects exerted by economic analysis on policy, and the role of the economist as an adviser on economic policy. The other chapter describes the political and administrative aspects of policy formation.

The study ends with an Appendix on *The Measurement of Employment* and *Income* by J. E. Gander of the Dominion Bureau of Statistics.

Increasing Profits on Western Ontario Hog Farms. Trant, G. I. Department of Agricultural Economics, Ontario Agricultural College Guelph, Ontario. 1960. pp. 14 + map.

A study concerned with the best combination of productive resources and the best size of operation on Western Ontario hog farms.

Broiler Weights and Profits. Nurse, J. G. Trant and J. Walker. Department of Agricultural Economics in co-operation with Department of Poultry Science, Ontario Agricultural College Guelph, Ontario. 1960. pp. 51.

A bulletin "prepared to demonstrate to broiler growers the way profits per year from a given housing area depend upon the weight at which broilers are marketed." It also includes a series of tables showing the most profitable market weight and profits to be expected per thousand square feet of housing space for a wide range of meat, feed, and chick prices.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

A. H. TURNER, Director

AUGUST 1961 Vol. XXXI No. 4

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G. P. BOUCHER, Editor

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ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials[b]	Total	Food	
		1935–39=100						1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	223.9	171.6	271.6	247.3	269.5	219.1	126.5	121.1	165.4
1960	230.9	221.4	178.4	264.4	242.4	276.7	222.7	128.0	122.2	167.6
1960										
Jan	230.7	221.3	184.9	257.7	240.9	268.7	221.9	127.5	121.6	173.5
Feb	230.2	218.6	185.2	252.0	237.7	....	....	127.2	120.8	170.1
Mar	229.8	220.2	188.2	252.2	237.9	....	....	126.9	119.4	171.7
April	231.5	224.7	193.7	256.2	244.9	279.9	223.4	127.5	120.9	166.8
May	231.6	226.6	195.4	257.8	246.5	....	....	127.4	120.2	167.3
June	232.4	231.7	198.4	265.0	250.6	....	....	127.6	120.8	166.9
July	232.4	228.4	186.7	270.1	252.3	....	....	127.5	120.5	164.0
Aug	230.5	216.3	160.9	271.7	236.5	281.6	222.9	127.9	121.7	165.6
Sept	230.5	217.2	160.7	273.6	239.7	....	....	128.4	123.3	167.6
Oct	230.6	215.6	161.9	269.4	240.0	....	....	129.4	125.8	166.9
Nov	229.9	216.5	161.8	271.2	239.5	....	....	129.6	125.5	165.9
Dec	230.4	219.6	162.7	276.5	242.0	....	....	129.6	125.3	166.0
1961										
Jan	231.3	221.1	163.7	278.5	243.0	271.8	223.5	129.2	124.4	165.7
Feb	231.6	220.5	163.3	277.7	243.8	....	....	128.9	123.4	166.1
Mar	231.3	216.2	162.4	269.9	241.4	....	....	129.1	124.0	164.7
April	230.9	213.0	162.8	263.1	237.4	283.4	226.6	129.1	123.9	170.0
May	231.3	213.8	161.7	266.0	236.3	....	....	129.0	123.2	....
June	231.4	216.5	166.8	266.3	238.8	....	....	129.0	123.5	....
July	234.0	216.2	165.5	266.8	....	....	....	129.0	124.9	....

Note:—See earlier editions for index numbers previous to 1926.
Source:—Dominion Bureau of Statistics, Ottawa.

(a) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates. 1960 indexes are subject to revision, since tax and interest rate figures are preliminary.

(b) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

The Minister of Finance says that "Our objective will be, first and foremost, to provide fuller opportunities for the useful and profitable employment of all Canadians willing and able to work. We shall strive to attain a more rapid rate of balanced growth for all sectors of our economy and all regions of our country. We shall seek to improve the technological efficiency of our industry, to heighten skills and capacities of our workers, and to stimulate the talents and initiative of our entrepreneurs. We shall endeavour to raise the levels of savings and investment by Canadians and reduce the balance-of-payments deficit."

These were some of the terms in which he summarized the objectives of the budget which he presented to the House of Commons on June 20. This budget was brought down in an economic environment marked by recovery from a period of special and cyclical adjustments, a period of special complexity during which the Canadian economy had to cope with a high level of unused capacity. The improvement in economic conditions will continue but will not likely lead to a raise of more than three per cent in our gross national production and to a full utilization of our resources. So, the budget is designed, through an appropriate assortment of fiscal, financial and commercial policies, to further stimulate the economy.

The budgetary deficit, at the end of the fiscal year ending March 31, 1962 is expected to reach a peacetime record of $650 million. But, as the Minister said, "In the circumstances confronting Canada today, it is appropriate, indeed desirable, that the Federal Government should, by incurring a sizable deficit, help to stimulate the economy." He wishes to better Canada's balance of payments position, to reduce our large import surplus of goods and services. To do so, he does not intend to have recourse to subsidies, tariffs, quotas or any other form of direct government control. On the contrary, he sees the solution in a set of conditions that will lead to a downward adjustment in the exchange rate.

Canadian capital needs should be satisfied more and more from Canadian sources. So, the Government's Exchange Fund will be used to help neutralize capital inflows and thus reduce the exchange rate by purchasing United States dollars in the exchange market. This reduction in the exchange rate should exert a favourable influence on Canada's competitive position, a more powerful and pervasive influence than direct government controls.

The intent is not "to penalize or discourage foreign capital that seeks constructive employment in this country" but to meet capital needs from increased Canadian savings. These savings will result from larger incomes flowing from increased employment and production that will parallel the reduction in the balance of payments deficit.

Recognizing the great influence of federal government financing on the capital market, the Minister made three announcements concerning debt management policy. First, new federal issues will be confined for the next several months to short-dated issues; the federal government will keep out of the market for long-term bonds on which provinces, municipalities and private business depend for a large part of their capital needs. Second, the federal treasury will take over the portfolio of the Unemployment Insurance Fund, thus removing $245 million from the long term market; it will issue non-marketable redeemable bonds to the Fund. Third, it will establish a Purchase Fund, in the initial amount of $100 million, to assist in orderly debt management. This fund will be used, in the next twelve months, to buy medium and long term securities of the Government of Canada in the market.

The Industrial Development Bank will be given a role to play in improving the capital market and in displacing certain types of capital inflows. In the past, that bank was authorized to grant medium and long term advances only to certain specified classes of industry; in the future, all businesses in Canada will be eligible for loans. The bank's financial resources will be increased from $160 million to about $400 million.

The Government will appoint a Royal Commission to examine Canada's financial structure and institutions. It will cover all aspects of money, credit, banking, and finance and will report well in advance of the decennial review of the Bank Act in 1964. The Minister of Finance compared it with the 1933 Royal Commission on Banking and Currency which made the last major review of Canada's financial framework.

The revenue and expenditure patterns of the Government of Canada may be summarily described as follows:

	Fiscal year 1959–60	Fiscal year 1960–61 (estimates)	Budget 1961–62
	— million dollars —		
Budgetary transactions:			
Expenditure	5,703	5,961	6,415
Revenue	5,290	5,616	5,765
Deficit	413	345	650
Non-budgetary transactions:			
Disbursements and charges	793	639	585
Receipts and Credits	831	690	255
Net receipts or disbursements	R. 38	R. 51	D. 330
Total cash requirements of Government and Canadian National Railways	819	535	980

Changes in the debt position, at March 31, are as follows:

—	1959	1960	1961
	— million dollars —		
Unmatured funded debt	15,574	15,890	16,068
Other liabilities	4,676	5,096	5,533
Total liabilities	20,250	20,986	21,601
Less net active assets	8,572	8,897	9,159
Net debt	11,678	12,089	12,442

Gross National Product.—Canada's G.N.P. was at a seasonally adjusted rate of $36,012 million in the first quarter of 1961. The pace of activity slackened more than seasonally, a sharp drop occurred in business outlays for new plant and equipment which had been increasing in the preceding two quarters, and a small decline was recorded in personal expenditure on consumer goods and services.

Business inventories had risen slightly in the last quarter of 1960 but shifted to a steady position in the first quarter of 1961. The downward shift in final and inventory demand was largely offset by a rise in outlays for new housing, a marked recovery in exports of goods and services following the fourth quarter decline, and continued strength in government expenditure.

The 1.2 per cent decline in the G.N.P. was much larger than what can be ascribed to the quoted developments. It largely reflected an unusually sharp increase in dividends paid abroad which, being earnings of non-residents, are excluded from the G.N.P.

Corporation profits declined by nine per cent before dividends paid abroad and 23 per cent after payment of such dividends. Fully reflecting the drop in these profits, national income declined by almost two per cent, on a seasonally adjusted basis.

Personal income was only very slightly higher and personal disposal income rose by about one-half of one per cent. A slight gain in labor income and a marked increase in estimated farm income more than offset a moderate decline in most other components of personal income; a drop in personal income taxes also contributed to the rise in disposable personal income.

Commodity Imports.—In May 1961 commodity imports from all countries reached a record monthly total of $551.2 million, which represents a 6.8 per cent increase from $516 million in May 1960. The previous monthly peak, $540 million, was set in May 1957. The May 1961 rise almost outweighed a 4.3 per cent decline in the 1961 January-April period. The value of imports in the January-May period declined only 1.8 per cent to $2,276.2 million in 1961 from $2,319.1 million in 1960.

Imports from various countries or groups of countries were as follows:

	May 1960	May 1961	January-May 1960	January-May 1961
	— million dollars —			
United Kingdom	56.0	70.8	255.5	256.1
Other Commonwealth countries	31.8	35.1	101.9	104.3
United States	344.4	354.0	1,610.1	1,555.3
All other countries	83.8	91.3	351.5	360.5

Wholesale Trade.—Canadian wholesalers sold goods valued at about $672.2 million in April 1961 and at $692.8 million in April last year. Sales were lower in each of the first four months of 1961 than in the corresponding months of 1960, the total for the January-April period declining to $2,574.4 million this year from $2,742.5 million last year.

Chain Store Sales and Stocks.—Chain store sales in May 1961 were estimated at $285.7 million compared with $270.8 million in May 1960. Sales in the January-May period rose to $1,315.4 million in 1961 from $1,287.9 million in 1960. May 1 stocks, at cost, rose to $380.6 million in 1961 from $366.7 million in 1960.

Department Store Sales.—Department store sales rose to $124.8 million in May 1961 from $117.1 million in May 1960. Sales in the January-May period rose to $527.7 million in 1961 from $514.4 million in 1960. The selling value of end-of-May stocks rose to $359.6 million in 1961 from $344.2 million in 1960.

Credit.—Balances outstanding on credit extended on the books of sales finance companies (for consumer goods), small loan companies, department stores, furniture and appliance stores, and chartered banks (for personal loans) totaled $3,072 million at the end of April 1961 compared with $2,866 million at the end of April last year.

CORRECTION

In Table 4, page 59 of the June 1961 issue, Weyburn loam 1920-59 should read "-322" instead of "-332".

RESOURCES FOR TOMORROW

G. P. Boucher

We, Canadians, are constantly reminded of the need to devise and revise policies for the efficient management of our natural resources. We must display sound economic judgment in the use of our soils, forest, water and other resources, to produce food, fuel, lumber, metals and to provide recreation and transportation facilities.

Nature has favored us with varied and abundant resources. These resources constitute a precious heritage which we must develop, for our own generation, and transfer intact or in accrued form to future generations. These ideas or goals are paramount in the minds of those who have been given responsibility for planning the national Resources for Tomorrow Conference to be held in Montreal next October.

This 1961 conference is not the first resource conference held in Canada. The first one was called by Sir Wilfrid Laurier in 1906. Sponsored by the Canadian Forestry Association, it led to the creation of a Commission of Conservation in 1910. A second conference, held in 1954, was sponsored by the Canadian Institute of Forestry, the Canadian Forestry Association, the Agricultural Institute of Canada, the Canadian Chamber of Commerce and the Engineering Institute of Canada.

The 1961 conference will differ from its two predecessors in that it will be chiefly concerned with the integrated multiple use of renewable resources, and sponsored by all provincial as well as by the federal government.

The groundwork of the conference was laid in 1958 by the Honourable Alvin Hamilton, then Federal Minister of Northern Affairs and National Resources and now Minister of Agriculture. Its direction was afterwards turned over to a Steering Committee composed of representatives—cabinet ministers—of all eleven governments.

The committee set up a Secretariat in Ottawa in the fall of 1959, defined the goals of the conference, made careful plans for research and organization and asked resource scientists and administrators to prepare a series of 80 "background" papers dealing with agriculture and agricultural land use, water, fisheries, forestry, wildlife, recreation, air and water pollution, problems of urban growth, and the regional approach to resource development.

What Kind of Conference?—The 1906 and 1954 conferences were sponsored by professional associations. The 1961 conference is an intergovernmental undertaking calling for a "frank exchange of views among government, industry, and non-governmental groups concerning the objectives of renewable resource management." This is in no way one of those federal-provincial conferences where representatives of different governments submit proposals and attempt to come to an agreement on certain administration or policy matters. In fact, it is not empowered to make decisions on behalf of governmental authorities. It is essentially a meeting of about 500 experts, from all over Canada, whose knowledge, training and experience constitute a priceless asset that is made available to all Canadians concerned with problems and responsibilities regarding "the management of renewable resources for the future."

Agriculture.—Readers of The Economic Annalist should be especially interested in the background papers prepared for the agricultural sector of the conference. These papers and their contents may be briefly described as follows:

1. *Demand Outlook for Canadian Agriculture.* Frank Shefrin of the Economics Division of the Canada Department of Agriculture and

M. W. Menzies, Grain Policy Adviser to the minister of the same Department discuss the outlook for our agriculture, over the next 20 years, giving special attention to the domestic and external markets, and international programs for the distribution of food.

2. *Supply Outlook and the Canadian Agricultural Production Pattern in 1980.* W. M. Drummond, Economist, Agricultural Stabilization Board considers the possibilities and implications of a more intensive and extensive agricultural use of our land resources.
3. *Appraisal of Canada's Land Base for Agriculture.* A. Leahey, Associate Director of Program (Soils), Research Branch of the Canada Department of Agriculture appraises the amount and quality of available land, possibilities of increasing the supply of agricultural land through irrigation, drainage and land clearing, and prospects for a greater knowledge of the supply of land and its quality.
4. *Fertility and Soil Management—Eastern Canada,* by N. R. Richards, Head of the Soils Department of the Ontario Agricultural College.
5. *Fertility and Soil Management—Western Canada,* by C. F. Bentley, Dean, Faculty of Agriculture, University of Alberta.
6. *Plant and Animal Breeding,* by J. R. Weir, Dean, Faculty of Agriculture, University of Manitoba.
7. *Disease and Pest Control,* by A. P. Arnason, Associate Director of Program, Entomology and Pathology, Research Branch, Canada Department of Agriculture.
8. *Mechanization,* by C. G. E. Downing, Head of the Department of Engineering Science of the Ontario Agricultural College.

   The last five papers listed supply an expert evaluation of the probable effects of technical developments on the conservation and development of our agricultural resources.
9. *Land Use Planning and Development.* C. C. Spence and H. K. Scott of the Economics Division, Canada Department of Agriculture examine the evolution of present-day uses of our lands and the role played by governments in directing and redirecting the various types of land use.
10. *Strengthening the Farm Firm.* J. C. Gilson, Department of Agricultural Economics, Faculty of Agriculture, University of Manitoba stresses the need for an objective assessment of the impact of recent, and probable, agricultural developments on the future of the family farm, talks about the alternative types of production firms in Canadian agriculture, and evaluates the family farm as a goal of public policies.
11. *Resource Adjustment in Agriculture*—Effects of Legislative and Administrative Framework. D. W. Carr, Consulting Economist, Ottawa is concerned with a clear definition of a national resource management policy and deplores the "continued dependence on an outmoded legislative-administrative structure, designed for land settlement and land accounting, as the instrument for carrying out resource management policy." He stresses the need for the coordination of functions and responsibilities, at all operational and governmental levels.
12. *Social Effects of the Evolution of Canadian Agriculture.* G. Fortin, Faculty of Social Science, Laval University raises questions about the impact of the decrease in the number of farmers in Canada, the effect of rural emigration on the social organization of rural communities, and the points to be considered before deciding if the actual rate of evolution toward a decline in the number of farmers should be left to find its own rhythm, slowed down or speeded up.
13. *A Survey and Assessment of the Role of Agricultural Extension in Comprehensive Resource Development.* W. B. Baker, Director and

> D. D. Solomon, Program Resource Specialist of the Center for Community Studies, University of Saskatchewan are concerned—worried may be a better word,—about the future of agricultural extension as an instrument for resource development. They would like to see it "move beyond the present stage of providing *services* and promoting *ad hoc* policies". They claim that the time has come to "clearly separate policy information from policy formulation and implementation," and call for an improvement in the quality of policy formulation and implementation through education.

What the Conference Will Do—These, and background papers in other sectors, will provide valuable raw materials for use and guidance in conference discussions. These discussions, understandably, will start with a general review of resource use and development and expand into a detailed consideration of problems in specific sectors. The probing of these individual sectors will be followed by studies of common problems, interrelationships among resource sectors, and regional planning as well as by discussions of special problems and a review and appraisal of the principles that guide resource development.

The conference is a *working conference* that will come to grips with conflicts stemming from lack of coordination in resource use and development. The problem before the conference is really one of resolving these conflicts and looking for ways to re-establish harmony between man and nature so that man himself may learn to derive optimum benefit from nature's gifts, without wasting any or part of these gifts and his own energy. The resource experts will therefore wish to study those structures that determine the various types of management. In fact, the conference program provides for a lengthy discussion of management problems, research work, administration, division of responsibilities, information, and extension work in relation to the well-ordered, best use and full development of renewable resources.

The conference may well mark the beginning of a new and dynamic era in our national economy if, while clarifying development problems, it finds ways to solve them. Policy-makers and their advisers would then find it easier to draw up over-all plans for the harmonious management of our natural resources, plans that would redound to the benefit of all Canadians.

THE POTATO ENTERPRISE ON NEW BRUNSWICK FARMS

G. C. Retson

Potatoes are the major cash crop in New Brunswick and during the past ten years have accounted for 17 per cent of cash farm income. On farms in commercial areas the enterprise tends to be highly specialized and often provides the major source of cash receipts. Returns are highly variable and reflect variations in yields and prices. The 1959-60 season was a successful one; yields were one per cent below and prices 47 per cent above the provincial average for the past ten years.

In 1960 the Economics Division conducted a small-scale study of that enterprise. Enumerators collected relevant business data from 31 growers—26 in Carleton and Victoria counties and five in the adjoining counties of Madawaska and York. The sample had been so designed as to supply an about equal number of small, medium and large growers that could provide detailed information on the production and marketing of the 1959 crop.

Farm Organization.—The average grower operated a farm of 275 acres, of which 118 acres were in crops. Potatoes accounted for about one-third of the crop acreage. Livestock numbers averaged 27 cattle, seven sows or hogs and 40 hens and chickens per farm. There were only three horses on the 31 farms.

Soil type, in terms of adaptability to potato production, seemed to be a major factor influencing farm organization. The high productivity of some of the better soils, under short rotations or close to continuous cropping, is reflected in land values which tend to restrict the possibilities of livestock production in these areas. Increasing size of the potato enterprise has also led to greater specialization not only by taking land out of the production of other crops but also through added demands on management. Some of the larger operators indicated they had reduced their livestock operations because they could not afford to divide their attention between a crop and a livestock program. Some operators had reduced their livestock numbers and expanded their woods operations.

Another factor which has influenced the organization of potato growing farms in New Brunswick is the general availability of labor for harvesting. At this critical time schools are closed and workers from adjoining districts, which generally have a labor surplus, move to the area. As the stoniness of many of the soils restricts the use of mechanical harvesting equipment, availability of labor had probably played an important part in facilitating increased size and specialization in the enterprise.

Large operators noted the insecurity of a specialized operation but suggested that there were some compensating factors. The fertilizer and machinery suppliers have a bigger stake in the large operator and tend to carry him for a longer time in periods of low prices. Expansion in potato processing would also bring increased security to the industry. Another development being considered by some of the larger growers was that of taking over the marketing of their own and possibly some of their neighbor's crop. Whatever their significance in a year of high prices, growers' comments pointed toward further increases in size and specialization in potato production on New Brunswick farms.

Scale of Operation.—Potato acreage ranged from five to 160 acres and averaged 38.2 acres per farm. Large acreage was associated with lower production costs and higher labor returns. This was largely attributable to higher yields and greater economy in purchase of supplies and in use of equipment on the larger units. The smaller operators, however, marketed a larger percentage of their crop during the latter part of the season and secured higher prices and higher labor returns per acre. The relatively high level of prices in the 1959 marketing season probably influenced farmers' opinions on scale of operation and their intentions with respect to future plantings. None of the growers planned any reduction from their 1959 potato acreage. Ten growers expected to maintain their acreage at or about this level and 21 planned some increase. Twenty-three of the 31 growers said that their current acreage was below that required for an efficient potato operation which, on the average, was suggested as being not less than 51 acres per farm.

Variety.—Katahdin was the chief variety; it accounted for 52 per cent of the potato acreage. All but five of the growers had some acreage planted to this variety. Next in importance was Kennebec, with 13 per cent, followed by Pontiac, Ontario, Sebago and Keswick ranging downward from eight to five per cent respectively of the total acreage. Ten other varieties accounted for nine per cent of the potato acreage.

Growers were asked two questions with respect to variety: (1) What variety do you feel has been the most profitable on your farm in recent years? and (2) What variety do you prefer on the basis of table quality? On the basis of profitability, 19 of the 31 farmers indicated Katahdin as their first choice. Other varieties listed as most profitable were Keswick, Sebago, Fundy, Green Mountain, Ontario and Pontiac. As for table quality, Green Mountain was the first choice of ten farmers. Other varieties preferred were Katahdin, Keswick, Netted Gem, Fundy and Kennebec. Some growers tended to discount the influence of variety on table quality, stating that how and where the crop was grown had more bearing on quality than variety. Another opinion frequently expressed was that, under current marketing arrangements, the grower was not adequately compensated for quality.

Yields.—Farmers secured an average yield of 139 barrels of potatoes an acre. This yield, a field run yield, was used in computing cost of production. To secure this yield farmers applied an average of 2,054 pounds of fertilizer and 0.4 tons of manure an acre. The crop received an average of eight pesticide sprays; moreover, 80 per cent of the growers applied a killing spray before harvesting.

The most favored crop program was a three-year rotation of oats, hay and potatoes which was used on 27 per cent of the land planted to potatoes in 1959. This rotation, with one or more consecutive crops of potatoes, accounted for 60 per cent of the potato acreage. A grain, hay and potato rotation with two or more crops of hay before plowing down to potatoes accounted for most of the remaining land.

Since growers followed standard procedures rather closely the influence of cultural practices on yields was not particularly noticeable. Applications of fertilizer ranged from 1,600 to 2,500 pounds an acre and were not associated with any significant variation in yields. The six growers who applied manure at an average rate of 3.4 tons an acre used 141 pounds less fertilizer an acre but had yields identical to those on farms where no manure was used on potatoes. The 13 farms growing from two to seven consecutive crops of potatoes on all or part of their land used 73 pounds more fertilizer an acre and had yields only three barrels an acre below those of farms with a single crop of potatoes in the rotation.

Price.—Price is a major determinant of the profitability of a crop. In the 1959-60 season it was also an important factor affecting farm-to-farm variations in returns secured by potato growers in New Brunswick. Potato prices advanced sharply in the spring of 1960 and some farmers, who marketed a substantial volume of their crop at that time, secured an over-all price more than double that received by growers who disposed of their crop earlier in the season.

Growers included in the study marketed 63 per cent of their crop as table stock, 23 per cent as seed and 3 per cent to starch factories. The remainder 11 per cent of the field run crop—was held for seed or farm use or lost in storage. Growers generally noted that the shrinkage in the 1959 crop was below normal. The average price received was $3.40 a barrel for potatoes marketed as table stock and $2.90 a barrel for seed potatoes. Sales to starch factories averaged $0.49 a barrel. Variations in prices received for table stock and seed potatoes were of little significance as time of sale rather than type of market was the major factor affecting price.

Financial Summary.—Potato receipts averaged $16,965 per farm. These included sales of seed, table stock and culls, plus an allowance for potatoes used for seed, feed or home consumption. The average price received by growers was $3.17 per 165-pound barrel, which is the standard unit of measurement in the area.

Potato expenses included cash costs such as seed, fertilizer, spray material, as well as various indirect or overhead charges, including depreciation, interest on investment, share of taxes, etc. To provide a comparison of the enterprise on farms where labor was hired with those where most of it was provided by the operator or members of his family, contract labor was the only type of labor included in expenses; the work done consisted largely of seed cutting and potato picking and was usually hired on a piece work basis. Labor returns,

Table 1.—Summary of the Potato Enterprise Business, 31 Growers, New Brunswick, 1959-60

	Average		
	per farm	per acre	per barrel
	— dollars —		
Potato receipts	16,965	....	....
Potato expenses (including contract labor)	7,435	....	....
Potato labor returns	9,530	....	....
Potato labor returns per acre	....	250	....
Potato labor (other than contract)	1,465	....	....
Cost of producing potatoes	8,900	233	1.67

which averaged $250 an acre, are thus the returns for time spent on the potato enterprise regardless of whether it was supplied by paid or unpaid workers. A record of time spent on potato operations was secured and, when charged to the enterprise at a rate of 75 cents an hour, resulted in an average cost of production of $233 an acre or $1.67 a barrel.

HE WHO HAS A SMALL FARM . . .

J. Zeman

Why do we still have so many small farms in Canada? Are these farms going to remain perennially with us? Can the operator of a small farm so manage his business as to increase his scale of operations or volume of business while holding on to the same acreage? How many small-farm operators are either pleased with or complacent about their farm acreage, and rather unconcerned with the farm as a business concern? Are levels of living lower and, if so, how much lower on small than on other farms?

Precise answers cannot be found to all these questions. However, studies made in the Davidson area of Saskatchewan in 1959 and 1960 may give support, add to—or even detract—from the many ideas already propounded in the widely-ranging debate on the worth—or social and economic discredit—of the small farm.

The Farm Operator.—The farms studied included 110 half-section farms in the Rural Municipalities of Monet (No. 257) and St. Andrews (No. 287). The chief characteristics of their operators, as owners or tenants, may be briefly summarized, as follows, all figures indicating number of operators or farms of various groups:

Ownership and Tenure

	Two quarter sections owned	One quarter owned, one rented	Two quarters rented	Total number of farms
Reconnaissance (1959) ...	60	2	14	76
Sample (1960)	25	2	7	34

Age Distribution of Operators

	Under 30	31-45	46-60	61 and over	Total number of farms
Reconnaissance	14	17	19	26	76
Sample	7	8	7	12	34

Number of Years on Farm

	5 years or less	6-15	16-25	26-35	36 and over	Total number of farms
Reconnaissance	16	17	18	9	16	76
Sample	8	6	7	5	8	34

Place of Residence

	On farm	Off farm	Both	Total number of farms
Reconnaissance	37	27	12	76
Sample	21	10	3	34

Amount of Time Devoted to Farming

	Full time	Part time	Total all farms
Reconnaissance	64	12	76
Sample	28	6	34

At the time of the 1960 sample survey, 10 operators were single, one was a widower, and 23 were married. Of the 23 married operators 12 had children at home, the number of children per family ranging from one to six. The average of the single operators was 39 and ranged from 22 to 71 years. Five of the single operators lived at home with their parents. Two bachelors lived singly and three had either their mother, sister or father living with them.

The level of formal education of farm people in Saskatchewan—and most probably also in other provinces—is generally lower than that of people in other walks of life (Table 1). This is most deplorable because modern farming calls

Table 1.—Percentage Distribution of Persons, 20 Years of Age and Over, with[a] Eight Years or Less of Schooling, Saskatchewan, 1951

Description of population	Percentage of people with 8 years or less of schooling
Farm	69
Rural non-farm	58
Urban	43
Total population	**57**

[a] Table 89—Report No. 6, *Royal Commission on Agriculture and Rural Life*, Province of Saskatchewan.

for a high level of intellectual ability. In fact, farming techniques and farm business methods are becoming increasingly complex. He who has a high level of education finds himself in a better competitive position than his less well-educated neighbor. The latter may also find that his comparative lack of education may act as a barrier to his entry into a more remunerative occupation outside agriculture.

In our sample, two operators had only Grade 4 schooling, 14 had Grade 8, 11 had one to three years of high school, three had complete Grade 12, three had spent one or two years at a university, and one had a university degree. As for the 23 farm wives, six had public school education, 10 had one to three years of high school, three had complete high school and four had teachers' certificates.

The 1951 census indicated that 69 per cent of the rural people in Saskatchewan had eight years of schooling or less. In our survey, 53 per cent of the farm operators and only 26 per cent of the farm wives had eight years of schooling or less. We are probably justified to assume that the present level of education of our farm people has improved but we must not discount the possibility that the level of education of people in our sample is higher than that for the province as a whole.

The Agricultural Ladder.—Some of our sample farmers had been farming for a long time and others only for a short time. The number of years these farmers had been on their present farms ranged from two to 52. They did not all begin, as farmers, the same way; two had started on their present farms as homesteaders, 22 had purchased their farms, three had inherited them, and seven have been full tenants all along.

These comments on peoples' start as farmers lead us, naturally, to this question: How does a young man start farming today? Does he look at the old "agricultural ladder" before he decides to climb? If he does, he is likely to find that the first rung is badly broken and that the whole of the ladder is rather shaky. If his ambition pushes him toward the goal of large-scale farming he may soon find himself in a state of dejection and frustration if he has little capital of his own and starts as a hired man.

In the Davidson area homesteads are a thing of the past. A beginning farmer, there, must either rent, purchase, or inherit land. He will purchase, however, only if he has the necessary capital or if credit is easily available because farm land in the area is high-price land.

Farm tenancy is an important, and today one may even say that it is the initial step or rung in the agricultural ladder. But, in some areas—not in all, of course—it may be a very slippery step. In fact, the young farmer of today is generally a farmer's son who starts farming with financial and other help from his father. In our sample, for example, 17 operators had branched off on their own with the help of a relative—the father, in most cases.

We may now give our—and most probably the generally accepted—concept of the modern agricultural ladder. The young farmer works with his father up to a certain age. He then goes partly on his own, buying or renting some land and using his father's machinery. Later, he may add to his farm acreage and may also, as is often the case, take over the family farm. When he buys land, the purchased land may very well be a parcel from his father's farm. This is a business-like method of transferring the family farm from father to son, a method that provides the son with an incentive to stay on the farm. In too many instances, unfortunately, father and son do not draw up any formal arrangement and the son's status and attitude may then, sometimes, be worse than those of a hired man. When there are many sons in the family, the process becomes more complicated. Not only does the family farm have to be transferred to one son but other farms have to be purchased for the other sons who want to farm. Some of them, however, may and often do leave the farm and search for other occupations. True enough a few leave it in the hope of saving enough money to be able to return to the land but the history of these hopeful people is often a history of frustrated hopes or changing ambitions. Some young fellows without a farm background, too, may find the eventual ownership of a farm a most alluring prospect. If they have enough capital they may well expect to become successful farmers provided they be willing to acquire the needed know-how by securing advice from farm neighbors and agricultural representatives, attending short farm courses, reading farm newspapers and extension and technical bulletins on farming. They may also more solidly prepare their future as farmers by first following a good agricultural diploma course. If they lack capital, however, they may have to start as hired farm workers. Now then, the question remains, "How, and how fast can they get on top if they have to use an old discarded ladder with a badly broken lower rung?"

The Changing Rural Pattern.—The rural population used to predominate in Saskatchewan but the trend is now toward an ever-increasing majority of urban dwellers. So is it also in the two municipalities included in our study. Table 2 illustrates the changing population patterns there. In the province as a whole, total population numbers have changed very little during the last 25 years but their distribution between occupations has changed markedly.

Table 2.—Change in Rural Population as a Percentage of Total Population, Small Farm Survey Area, 1960

	1926	1931	1936	1941	1946	1951	1956
R.M. No. 257	1,215	1,354	1,156	1,026	907	844	887
Elrose	251	310	234	253	304	491	538
Hughton	111	116	99	141	116	87	100
Total population	**1,577**	**1,780**	**1,420**	**1,420**	**1,327**	**1,422**	**1,525**
Rural population as a percentage of total population	77.0	76.1	77.6	72.3	68.3	59.4	58.2
Number of occupied farms	264	332	330	317	326	249	264
R.M. No. 287	1,663	1,711	1,545	1,453	1,135	1,115	1,039
Rosetown	1,142	1,553	1,520	1,470	1,563	1,865	2,262
Zealandia	203	175	136	172	156	162	186
Sovereign	173	184	147	127	159	171	161
Total population	**3,181**	**3,623**	**3,348**	**3,222**	**3,013**	**3,313**	**3,648**
Rural population as a percentage of total population	52.3	47.2	46.1	45.1	37.7	33.7	28.5
Number of occupied farms	397	391	386	403	369	335	318

The total acreage in improved agricultural land has not changed much in recent years and one may say that it has probably reached its upper limit. As farms increase in size they decrease in numbers. The original land settlement policy favored a small size of farm. The homesteads were only one quarter-section in size and another quarter-section could later be pre-empted. Farmers could otherwise add to their acreage only by renting or purchasing more land. The advent of mechanization in the late thirties changed all that. Large outlays were and are still required for the purchase of machinery and larger farms are needed for the economic use of that machinery.

Some farmers look to farming simply as a way of life whereas others look to it as a definite and complex but challenging type of business operation.

Most Saskatchewan farmers are business-minded. As a proof of this assertion, we may bring our estimate that about one third of our farmers produce three quarters of our agricultural output. This output is a producer of income. Farmers, of course, value the size of their annual income differently, depending on their emphasis on the business aspect of farming. All, however, need at least a moderate income to go on as farmers. An ambitious operator of a small farm, who has business, technical and managerial skills may find ways to better his situation and move up to the class of large-scale farmers. His neighbor, though, may be less concerned with business profits and feel quite happy to live on a small farm that does not entail too many business worries and brings him peace of mind and other satisfactions. He sets his own working hours, makes his own decisions, and does not have to work under the watching eye of a supervisor. A lover of nature, he likes to depend on it rather than on the intricacies of business for his happiness. He is not isolated, as in former days, and his social and recreational opportunities are as plentiful and less costly than those of his urban friends.

In the past, farm and home were a single and closely-knit unit. They are more distinct today. Many farmers live in villages, towns or cities and have to commute to the farm to do farm work. The kitchen no longer serves as a part-time repair shop. Separating cream, churning butter and other activities are no longer carried on in the farm home. The farm home, however, now enjoys about the same amenities and conveniences as the urban home. As an example, it was not so long ago that only a few of our farm homes had electricity; today about 70 per cent of them are electrified.

When a farmer does not live on his own farm he may tend to become only a part-time farmer and may even be tempted to withdraw completely from farming. In fact, when a farmer lives in a non-farm community he is better aware of non-farm employment opportunities, being in closer contact with people and firms in need of labor. Of the 34 farmers in our 1960 random sample nine lived in a town, three both in town and at the farm, and 21 lived permanently on the farm.

Future Plans.—How can a half-section farmer better his situation? There is no one single answer to this question. In fact, there are many ways and combinations of ways in which he may do so. Suffice it to mention that he may increase or intensify his farm business or add to his income by securing off-farm employment. His choice, his decisions depend on available opportunities and on his own preferences.

Sound, intelligent planning is the key to success in farm management. Of the 110 farmers in our studies, 76 had been interviewed as part of a reconnaissance survey and 34 as part of a special random survey. We inquired, from the latter, as to their future plans concerning the size of their farm units. While going into a description and analysis of their answers, let us also have a look into the past. We may thus be better able to interpret these answers.

Only eight of these 34 farmers had ever operated more than a half-section farm. Three of them had three quarter-section units, at the time of the study, two had a section, at one time, two a one, two a one and one half-section, and one had farmed two sections. The age of these eight operators averaged 63 years and ranged from 38 to 76. The two youngest farmers intended to enlarge the size of their farms, if circumstances permitted.

Of the 34 farmers 21 were 45 years of age or older; the average for these 21 farmers was 61 years of age. Of the 21 only seven had ever farmed more than a half-section. Only three wished to expand the size of their operations; they were 45, 46, and 54 years of age, respectively. The 54-year old one had previously farmed one section of land. We have reason to believe that many half section farmers do not have larger farms simply because they do not care about operating larger units.

Only 12 of the 34 expressed the willingness to increase their size of business, if they ever found it possible to do so. Their ages averaged 35 years and ranged from 22 to 54. This expressed willingness may very well turn out to be nothing more than a dream. More land can be purchased, yes, but at what price? The purses of the half-section farmers are not always well-enough filled up to allow them to buy high-price land. And, low-price land is usually land of lower quality that can be improved only if a farmer wants to and has the money to rehabilitate that land. Three other farmers will certainly enlarge their farms since they will eventually take over their fathers' farms. Three others are able and aggressive and thus likely to add to the size of their farm units. As for the other six, one fails to see how they could be induced to shoulder a heavier burden. They are older farmers and age, as anyone knows, often curbs expansion ideas.

Thirteen operators are about to retire as farmers; 11 of them are over 60 years of age and two others are still comparatively young but are finding other sources of employment. In seven cases, the land is most likely to be turned over to a son who is now either farming on his own or in partnership with his father. Five operators will either sell or rent their farms and the other, a tenant, will simply return the land to the landlord. Most likely, the larger part of these units will be incorporated into larger farm units.

Nine farmers are happy as they are and do not wish to farm more than a half-section. Their ages averaged 48 years and range from 28 to 69.

Six farmers were part-time farmers; they secured a fairly large income from off-farm employment. Others also found employment away from the farm but not enough to qualify as part-time farmers. In three families the wife was employed full-time in non-farm work.

The size or volume of business may also be increased by intensifying operations, adding new enterprises to the over-all business and higher-yielding practices such as the use of commercial fertilizers and higher-yielding animals and crops. This, admittedly, is easier said than done. Farm inputs cost money and the more productive they are the more they are likely to cost. Credit is an answer and certainly the right answer if its use will lead to larger outputs per unit of input.

When a farmer finds it impossible to increase his income, he should look for ways of curtailing his expenses. A little sacrifice of so-called independence and a greater co-operative sense should go a long way toward the control of some types of expense. In fact, he may come to an agreement with neighbors for the use of machinery, exchange of labor, living accommodation, etc. Of our 34 farmers 23 "ran their own show" quite independently. The other 11, however, had made agreements with relatives for the use of farm machinery. These agreements ranged from the sharing of one or more machines to the common or co-operative use of all machinery. In some cases, labor was pooled; in others it was traded for the use of equipment. The age of the operator undoubtedly exerted some influence on the will to pool or exchange productive resources. The older operators, for example, supplied equipment in return for their son's or sons' labor. Twelve farmers, ranging from 64 to 76 years of age, could be classified as semi-return; five of these 12 farmers were still most actively concerned with decisions concerning the management of the farm. Could it be that retirement or semi-retirement is resorted to as a means of gaining some bargaining advantage?

Levels of Living.—The measurement of levels of living is a process fraught with many difficulties, the living content being made up of so many intangibles and variables. Despite their inaccuracies, however, data on levels of living usually afford valuable information for comparisons between groups and changes over time.

In any event, who would dare say that Saskatchewan farmers would be happy to return to levels of living "enjoyed" during the drought and depression thirties? A study[1] published in 1939 gives the following description of levels of living during that period. "Before the depression, farm contributions accounted for between 40 and 50 per cent of the total value of all food requirements on farms of the prairie region. The limitations to diversification imposed by climatic conditions were reflected in the diet of the farm family. There was a rude plenty of salt pork, eggs, milk, cream, and butter in summer, and of frozen beef and potatoes with reduced supplies of dairy products in winter. Farmers made very few purchases from the meat markets of the villages and towns, but in some communities a weekly supply of fresh meat through the summer months might be secured through a measure of informal local co-operation in the form of a "beef-ring." On the majority of farms cream was looked upon as a luxury and little was consumed either in summer or winter, nearly all of it being reserved for churning into butter or for shipment to the nearest creamery. The chief defect in the diet of the rural population was the preponderance of starches and meats and the inadequate supplies of leafy vegetables and fresh fruits. Wild or native fruits were rarely found on the open prairie although "Saskatoonberries" grew readily in sheltered river and lake valleys. The deficiencies of the farm garden were partly overcome in prosperous years by fairly substantial purchases of canned tomatoes and canned corn, of dried fruits such as prunes and evaporated apples, of fresh fruit in the fall for preserving, and of apples for winter consumption. Gardens began to show improvement in well-established communities as more time could be spared from the cultivation of field crops; trees were planted, which in addition to improving the appearance of the farmstead formed an effective "wind-break" or "shelter belt," both for the farm-house and the farm garden, making possible a much greater production of vegetables and the cultivation of small fruits specially adapted to the region."

In our Davidson study area, it may well be pointed out, farmers now produce comparatively little for use in the farm home. Only 12 of the 34 farmers in our sample kept livestock. Most of the farmers bought their milk, cream, butter eggs, and meat. Most of them, however, had a garden, even if the heavy soils in the area are not too well adapted to gardening. Fruits and vegetables were generally "grown in the store." Thirty-one of the 34 farmers spent $893 for groceries, on the average, in 1960. The other three farmers were living with their parents and did not have to incur cash expenses for food. For all 34 farmers, total cash living expenses averaged $1,678 per family. Items of expense included groceries, fruit and meat, fuel, life insurance, clothing, new furnishing, and expenses for other personal and educational, church, charity, and health purposes.

Our appraisal indicated that the level of living of these farmers was fairly high. We devised a rating, on a 12-point basis, taking account of facilities found in the home, the appearance and condition of the dwelling, the age and make of the car. According to this rating, four of the 34 farmers were enjoying a very high level of living. Three of the four were urban dwellers, two were semi-retired, one had another occupation, and the wife of the fourth one was employed, full time, in off-farm work. Eleven were rated as having a "good," 12 a "fair," and six a low level of living. As for the five single operators who lived with their parents, we assumed that their level of living was the same as that of their parents. The level of education of farm people being generally higher in the Davidson area than in the province as a whole, one might therefore expect levels of living also to be higher. Another factor which, undoubtedly, has greatly contributed to the rise in levels of living, is the size and quality of the crops that have been harvested in recent years. Opportunities for off-farm employment have also been quite good.

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[1] Britnell, G. E. *The Wheat Economy,* The University of Toronto Press. Toronto. 1939 p. 168.

Table 3 was organized to supply a descriptive summary of the facilities enjoyed by the 34 farmers. Each one of them had a radio, only two were without electric power, and only two did not have a telephone. Twenty-three had a television set and others would like to acquire one but feel that "reception" is not good enough to justify the expenses. Most farm homes had refrigerators and electric or gas stoves.

Table 3.—Specified Living Convenience and Facilities, Rural Farm, Rural Non-Farm and Urban Households, Canada 1951, and Saskatchewan Rural Municipalities Nos. 257 and 287, 1961

		1951[a]				1961
	Canada	Urban	Rural			R.Ms. 257 and 287
			Total	Non-farm	Farm	
Number of households	3,409,295	2,155,035	1,254,260	624,475	629,785	34
Proportion of households with:			—per cent—			
Telephone	60	72	39	33	44	94
Radio	92	95	87	86	89	100
Passenger car	42	41	45	38	52	82
Electricity	87	99	66	76	56	94
Powered washing machine	73	77	64	62	66	100
Mechanical refrigerator	47	59	26	30	22	88
Gas or electric stove	50	69	17	21	13	82
Inside running water	74	94	40	46	33	59
Bath or shower (exclusive use)	57	77	22	28	16	50
Flush toilet (exclusive use)	64	86	27	35	20	50
Television set			not included			65

[a] Abell, Helen C. "The Farm Family in Canada" *The Economic Annalist*, June 1959.

A cause of real concern, however, was the fact that part of the living costs was taking much away from what ought to be set aside as reserves for depreciation or as interest on investment. Twenty farmers had to spend on living, amounts ranging from $193 to $4,718 per farmer, which should have been set aside as interest on investment and depreciation reserves. Even when off-farm income is brought into the picture, we are left with 11 operators who were faced with the alternative of lowering their level of living or of dipping into what should be built up as reserves for carrying on with the farm business; the amounts so absorbed ranged from $207 to $1,850 per farm.

Undoubtedly, there were mitigating or offsetting circumstances that helped maintain fairly high levels of living. Some operators made adjustments that enabled them to keep their investments in machinery at a low level; others, or their wives, had off-farm jobs; and still others kept livestock as a source of perquisites and additional cash income.

Concluding Remarks.— The complete reconnaissance survey of 76 farms in two municipalities, in the fall of 1959, was undertaken as a preliminary step to a farm business organization to be undertaken in the Davidson area. The 34 farms in our special random sample were not visited till the fall of 1960. Some changes obviously, should have occurred during the one-year interval. In fact, as our enumerators went about their work they found this to be true. Fifty of the 76 farms visited in 1959 had hardly changed at all but others had passed completely out of the picture. Three had sold out—in each case to another half-section farmer within our group of 34 farmers. Eight had quit farming. They had either completely retired from remunerative work or secured other types of employment, after having rented their land to other farmers. Three had died and their farms were being temporarily managed on behalf of the heirs, pending final settlement of the estate. Ten had increased the size of their farms by from one to three quarters. Two had reduced it to a one quarter-section.

The number of half-section farms is probably decreasing and will probably continue to do so.

He who has a small farm . . . will probably solve his own problems by intensifying his operations, increasing the size of his farm business unit, securing off-farm employment in addition to work on the farm, and even moving out of farming altogether. Now then, the number of half-section farms probably tends to decrease. Farmers themselves are making adjustments, on their individual farms and among farms, that may eventually help solve the small farm problem.

CHANGES IN NUMBER AND SIZE OF FARM UNITS IN THE RUSSELL-MINNEDOSA AREA OF MANITOBA, 1956-60

J. G. MacKenzie

The total number of farm units on clay loam soils of the Newdale association, in the Russell-Minnedosa area of Manitoba, decreased during the 1956-60 four-year period. We have secured detailed information on these changes in farm numbers, according to farm size and to the method of acquiring land to add to existing units or to build up new units, from farm occupancy maps prepared by the Economics Division in 1956 and 1960[1].

The Newdale clay loam soils are Northern Black Earths found in the area south and southwest of Riding Mountain National Park. These soils are highly fertile and well suited to production of the common grain and forage crops. Numerous sloughs and water drainage channels, however, impede the use of large tillage machines and add to the cost of field operations. Grain and grain-beef cattle farms predominate in this area. Large hog enterprises are found on only a small number of farms, and poultry raising is generally unimportant. Capital investment in real estate and machinery amounts to about $16,500 per farm on the two-quarter section units and $32,000 on the three and four-quarter units. Investment in livestock varies according to kind and size of enterprise.

In 1956 there were 561 farm units in the study area. The two-quarter and three-quarter section units were the most common size-groups, and together with the one-quarter units made up 74 per cent of all farms. Four-quarter and larger units accounted for 26 per cent. Table 1 shows the distribution of these farm units, by size, and the number of new units formed in each group between 1956 and 1960.

Of the total number of farms recorded in 1956, about 25 per cent had disappeared by 1960. The land parcels which made up these units had either been absorbed by neighboring units or reorganized into new units and taken over by an operator who had not previously been farming in the area. Except for the one-quarter section group of farms, the various unit size-groups had about the same rate of disappearance.

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[1] These maps were prepared to show the most common size of farm unit, and the location of farm operators to be interviewed in our study of *Changes in Farm Organization in Manitoba*. The study area includes 12.75 townships scattered over Newdale clay loam soils.

About 23 per cent of the farms visited in 1956 were larger in size when the area was revisited in 1960. These farms, in the process of acquiring additional land, moved into a large unit size-group and became new units in the larger categories. For example, of the 50 farms in the "70-239 acre" size group visited in 1956, six had increased in size from 1956 to 1960; four of these farms had enlarged and moved up to the "240-399 acre" size-group, one to the "400-559 acre" size-group; and the other to the "560-719 acre" size-group.

In 1960 the study area included 471 farm units. About 60 per cent of these units were farms which had remained of the same size[1] during the 1956-60 period and 40 per cent were new units.[2] The proportion of units which had remained the same size was fairly constant for all unit-size groups.

Table 1.—Disposition of Farm Units[a] on Newdale Clay Loam Soils According to Size of Unit, Russell-Minnedosa Area of Manitoba, 1956-1960

	Size of unit							
	70–239 acres	240–399 acres	400–559 acres	560–719 acres	720–879 acres	880–1,039 acres	1,040 and over acres	All units
	—number of farm units—							
Number of farm units, 1956	50	223	140	70	38	21	19	561
Disposition of farm units, 1956 to 1960:								
Units disappeared	21	54	30	15	7	8	4	139
Units enlarged	6	52	38	14	14	3	0	127
Units remained same size	23	117	72	41	17	10	15	295
New farm units, 1960	12	33	30	40	20	18	23	176
Number of farm units, 1960[b]	35	150	102	81	37	28	38	471
	—per cent change in number of units—							
Change in number of farm units, 1956 to 1960	−30	−31	−27	+13	− 3	+33	+100	−16

[a] A father and son or other family group arrangement working together with common machinery complement is considered to be one farm unit. Farms with less than 70 total assessed acres were not enumerated.

[b] Farm units in 1960 were those which had remained of the same size between 1956 and 1960, plus new farms found in each unit-size group in 1960.

In addition to the farms which had added to their acreages, many new units were formed either by the reorganization of land parcels which were sold directly by operators who had abandoned farming or through the settlement of estates. The 12 new farm units in the 70-239 acre group would all have been formed from land parcels which previously had been part of larger units that had broken up through sale or inheritance. On the other hand, the new units in the other farm size group came both from farms which had moved up from a smaller-size group and from new units formed from the reorganization of land parcels.

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[1] These farms were considered not to have changed in size, i.e. they were of the same size in 1960 as in 1956.

[2] New units (by size-group) were formed either by purchasing or renting all land and setting up new headquarters or by enlarging existing units. In both cases there was a decrease in number of units in another farm-size group. This article is concerned with change in number of farm units according to size of farm without regard to change of farm operators.

The relationship between number of new farm units and the number of units which disappeared varied by unit-size group. During the 1956-60 period the total number of one-quarter farms decreased by 30 per cent, two-quarter farms by 31 per cent and three-quarter farms by 27 per cent; the four-quarter farms increased by 13 per cent and seven-quarter and larger farms by 100 per cent. The total number of farm units in all size groups decreased by 16 per cent. In 1960, because of the shift to a larger size of farm, the four-quarter section and larger units made up 39 per cent of the total number of farms in the study area.

When land was acquired, both to enlarge the size of farm units and to start units with new headquarters, there was a greater tendency for operators of the smaller farms to purchase than to rent and for operators of the larger farms to rent than to purchase (Table 2). The one-quarter units purchased 83 per cent of the land used for these purposes, two-quarter units 76 per cent, three-quarter units 78 per cent and four-quarter units 62 per cent. On the other than the five-quarter units rented 58 per cent, six-quarter units 50 per cent, and seven-quarter or larger units 62 per cent of the farmed land. For all land purchased and rented, 56 per cent was acquired by purchase and 44 per cent by renting.

Farm people thus seem to associate security of livelihood for the family with land ownership. To reach this stage of security, the operators of the smaller farms, strive to own all or at least a large part of the land they operate. The operators of the larger farms generally enjoy this type of security and then enlarge their land holdings still further to increase the returns to labor and to capital investment in machinery. So, they are not too concerned whether the additional land be owned or rented.

Discussion of the small farm problem in this area with farmers and municipal officials indicated that many operators of small, uneconomic units are not fully replacing their capital investment in buildings and machinery.

Table 2.—Proportion of Land Purchased and Rented in the Formation and Enlargement of Farm Units According to Size of Unit, Russell-Minnedosa Area of Manitoba, 1960

Acquisition	Size of unit[a]							All units
	70–239 acres	240–399 acres	400–599 acres	560–719 acres	720–897 acres	880–1,039 acres	1,040 and over acres	
	—per cent of acreage—							
Purchased[b]	83	76	78	62	42	50	38	56
Rented[b]	17	24	22	38	58	50	62	44
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Total, purchased and rented	5	13	9	22	11	14	26	100

[a] Size of farm unit at time when occupancy maps were prepared in November 1960.

[b] Data not obtained for land outside the study area that made up part of farm units with headquarters inside area, or for land inside the area that made up part of units with headquarters outside the study area.

Instead, when buildings and machinery are in need of replacement, the operator is inclined to sell out and the land is then absorbed by neighboring units. Because of high initial machinery investment requirements per farm unit and of the great working capacity of many of the newer tillage machines, there is probably an increasing tendency for fathers and sons and possibly brothers to work together and form a larger and more economic operating unit by pooling their resources in buildings, machinery and labor.

In this area there was a unit-size break between the three-quarter section and the four-quarter section farms. The one, two, and three-quarter section farms all decreased in total numbers by nearly one-third while the number of four-quarter and larger units increased. Also, 73 per cent of all land purchased and rented to increase size of or to form new farm units was acquired by four-quarter section or larger units. This shift of land parcels from small to larger units would suggest that operators of grain or grain-livestock farms on Newdale clay loam soils consider an economic unit to be one that is at least four-quarter section in size.

PUBLICATIONS OF THE ECONOMICS DIVISION

Canada Trade in Agricultural Products with the United Kingdom, the United States and All Countries, 1959 and 1960. Ottawa. June 1961.

The sixth in a series of annual bulletins supplying statistics on Canada's agricultural trade with other countries.

Canadian Agriculture in 1960. A Chronology of Federal Policies. Cameron, Marjorie R., Ottawa. April 1961. pp. 63.

A chronological record of changes in federal policies affecting agriculture and of the more important events relating to agricultural policies.

Marketing Boards in Canada, 1959 National Summary. Drayton, L. E., Ottawa. February 1961. pp. 8.

The third in a series of annual reports on the activities of provincial agricultural marketing boards in Canada. It deals with the nature of these boards' operations and gives statistical and other information on their number, the number of producers affected, and the value of sales.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

In Canada: The Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal 34.

Report of the FAO/WHO Seminar on Problems of Food and Nutrition in Africa South of the Sahara, held at Lwiron, Bukavu (Congo), 18-29 May 1959. FAO Nutrition Meetings Report Series No. 25. Rome. 1961. pp. IX + 93.

"The aim of this food and nutrition seminar was to review the information acquired during the past ten years, to synthesize it on both the national and regional levels, to make a critical study of methods used as well as of applied nutrition programs, and to draw conclusions both with regard to future work in the field of research as well as that in practical application."

Report of the European Seminar on Evaluation of Home Economics Extension Programs, held at Vienna, Austria, 9-21 May 1960. FAO Nutrition Meetings Report Series, No. 27. Rome. 1960. pp. VI + 50.

A report on the first European seminar on the evaluation of home economics extension programs.

Monthly Bulletin of Agricultural Economics and Statistics

(*a*) Volume 9, No. 12, December 1960 and Volume 10, No. 1, January 1961. These two issues contain an article, in two parts on *Trends in World Demand for Jute Manufacturers.*

(*b*) Volume 10, No. 2, February 1961 has an article by K. C. Abercrombie on *The Transition from Subsistence to Marked Agriculture in Africa South of the Sahara.*

(c) Volume 10, No. 2, March 1961 has an article by Mirko Lamer on *Dairy Problems and Policies in India.*

All four issues, as usual, have *Commodity Notes and Statistical Tables.*

Production Yearbook, 1959. FAO, Rome. 1960. pp. XII + 484.

The thirteenth issue of the Production Yearbook. It contains data on land use, population, agricultural production, food supplies, prices, wages, and freight rates.

Trade Yearbook, 1959. FAO, Rome. 1960. pp. XVII + 349.

This thirteenth edition of the Trade Yearbook supplies statistical data on the value of agricultural trade and on imports and exports of agricultural products.

Report of the Symposium on Education and Training in Nutrition in Europe, held at Bad Homburg, Germany, 2-11 December 1959. FAO Nutrition Meetings Report Series, No. 26. Rome. 1960. pp. IV + 55.

A symposium sponsored jointly by FAO and the World Health Organization. The report deals chiefly with the training of professional workers in applied nutrition and dietetics, medicine and public health, home economics, agronomy, and school teaching.

Food Supply, Time Series. FAO, Rome. 1960. pp. XIII + 170.

A series of statistical tables, one for each of 32 countries, on production, available supply, uses as feed and for manufacturing purposes, and consumption of food.

National Dairy Policies in Advanced Countries. FAO Commodity Policy Study. No. 12, FAO, Rome. Italy. 1960. pp. 68.

This report is organized into five parts: *Structural Characteristics of the Dairy Industry; Development of National Dairy Policies: Aims and Methods; Economic Repercussions of the Policies;* and *Appraisal of National Dairy Policies.* It also contains an appendix on postwar dairy policies in individual countries.

OTHER PUBLICATIONS

Feeding the Dairy Herd. A Study of Practices in South-West England. Langley, J. A., Department of Economics (Agricultural Economics), University of Bristol, Devon, England. March 1961. pp. 44. Price: 5/.

A study "designed to obtain a clearer picture of the contemporary pattern of feeding dairy cows, under the price-cost relationship for milk and the factors going into milk production at the present time, on the rank and file of milk-selling farms in the South West of England; to test these practices against the theoretical considerations of feeding cows for maximum profit and to outline a method of reasoning whereby any milk producer can arrive at the most profitable system under the particular circumstances on his own farm."

Uncertainty and the Farmer. An Introductory Survey of Some of the Effects of Risk and Uncertainty on the Farm Business. Dunford, W. J., Department of Economics (Agricultural Economics), University of Bristol, Devon, England. March 1961. pp. 40. Price: 3/6.

A study of farmers' attitudes toward uncertainty, of some of the factors which affect these attitudes, and of some effects of uncertainty and of the economic cost of precautionary measures on farm business organization.

Boiler Weights and Profits. Nurse, J., G. Trant and J. Walker. Report on a co-operative project of the Departments of Agricultural Economics and Poultry Science of the Ontario Agricultural College, Guelph. 1961. pp. 51.

This bulletin demonstrates "to broiler growers the way profits per year from a given housing area depend upon the weight at which broilers are marketed." It also contains a series of tables which indicate the most profitable market weight, and the profits that may be expected per 1,000 square feet for a wide variety of meats, feed and chick prices.

Proceedings of the Co-operation and Marketing Conference. Department of Agricultural Economics, Ontario Agricultural College, Guelph. January 3-6, 1961. pp. 106.

These proceedings include, in the following order:

1. A paper—*Are farm organizations too big for democratic control?*—by Dr. H. H. Hannam, President, Canadian Federation of Agriculture.
2. a panel discussion on the best form of farm organization.
3. papers on:
   (a) *Toward better communications.*
   (b) *What objectives can we expect marketing boards to achieve?*
   (c) *What objectives can we expect voluntary marketing co-operatives to achieve?*
   (d) *What objectives can we expect governments to achieve for agriculture?*
4. a panel discussion on producer marketing boards and voluntary marketing co-operatives.
5. papers on:
   (a) *Outlook.*
   (b) *The effect of our exchange rate on Canadian agriculture and industry.*
   (c) *The three roles of marketing board directors.*
   (d) *Farmer-owned facilities—How they have been financed.*
   (e) *How other business is financed.*
   (f) *Control of farmer-owned facilities.*
6. a panel discussion on How much help and/or direction should co-operatives and marketing boards expect from government?

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION
A. H. TURNER, Director

OCTOBER 1961 Vol. XXXI No. 5

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Published by Authority of the Honourable Alvin Hamilton
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS
Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials[b]	Total	Food	
		1935–39=100						1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	223.9	171.6	271.6	247.3	269.5	219.1	126.5	121.1	165.4
1960	230.9	221.4	178.4	264.4	242.4	276.7	222.7	128.0	122.2	167.6
1960										
Jan	230.7	221.3	184.9	257.7	240.9	268.7	221.9	127.5	121.6	173.5
Feb	230.2	218.6	185.2	252.0	237.7	....	....	127.2	120.8	170.1
Mar	229.8	220.2	188.2	252.2	237.9	....	....	126.9	119.4	171.7
April	231.5	224.9	193.7	256.2	244.9	279.9	223.4	127.5	120.9	166.8
May	231.6	226.6	195.4	257.8	246.5	....	....	127.4	120.2	167.3
June	232.4	231.7	198.4	265.0	250.6	....	....	127.6	120.8	166.9
July	232.4	228.4	186.7	270.1	252.3	....	....	127.5	120.5	164.0
Aug	230.5	216.3	160.9	271.7	236.5	281.6	222.9	127.9	121.7	165.6
Sept	230.5	217.2	160.7	273.6	239.7	....	....	128.4	123.3	167.6
Oct	230.6	215.6	161.9	269.4	240.0	....	....	129.4	125.8	166.9
Nov	229.9	216.5	161.8	271.2	239.5	....	....	129.6	125.5	165.9
Dec	230.4	219.6	162.7	276.5	242.0	....	....	129.6	125.3	166.0
1961										
Jan	231.3	221.1	163.7	278.5	243.0	271.8	223.5	129.2	124.4	165.8
Feb	231.6	220.5	163.3	277.7	243.8	....	....	128.9	124.0	166.2
Mar	231.3	216.2	162.4	269.9	241.4	....	....	129.1	124.0	165.5
April	230.9	213.0	162.8	263.1	237.4	283.4	226.6	129.1	123.9	168.7
May	231.3	213.8	161.7	266.0	236.3	....	....	129.0	123.2	169.3
June	231.4	216.5	166.8	266.3	238.7	....	....	129.0	123.5	172.5
July	234.0	216.2	165.5	266.8	238.8	....	....	129.0	124.9	....
Aug	234.5	214.6	162.6	266.6	....	....	....	129.1	125.2	....

Note:—See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

[a] Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.
1960 indexes are subject to revision, since tax and interest rate figures are preliminary.

[b] Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

External Trade.—Canada's total exports, during the second quarter of 1961, rose to $1,419.5 from $1,259.7 million in the first quarter of the year and $1,310.7 million in the second quarter of 1960. The cumulative total for all exports, in the first six months of the year, rose to $2,679.3 million in 1961 from $2,602.2 million in 1960. Imports rose to $1,489.3 million in the second quarter of 1961 from $1,286.9 million in the first quarter of the year and $1,479.4 million in the second quarter of 1960. Cumulative imports in the first six months of 1961 declined slightly to $2,776.2 million from $2,805.6 in the corresponding period of 1960. The import balance for the January-June period of 1961, at $96.9 million, was less than half the balance for the first six months of 1960.

Statistical data on exports to and imports from various countries in the first six months of the year (estimates only for 1961) may be summarized as follows:

	June		April-June		January-June	
	1961	1960	1961	1960	1961	1960
	— million dollars —					
Total Exports						
United Kingdom	85.4	82.7	216.5	227.0	437.6	436.3
Other Commonwealth	22.9	30.2	72.0	85.6	158.9	155.1
United States	266.2	257.1	766.1	765.8	1,435.7	1,534.1
All other	137.6	87.4	364.9	232.4	647.1	476.7
Totals	**512.1**	**457.5**	**1,419.5**	**1,310.7**	**2,679.3**	**2,602.2**
Imports						
United Kingdom	58.0	55.0	171.5	168.3	313.3	310.5
Other Commonwealth	23.2	23.8	76.8	77.7	127.4	125.7
United States	335.9	327.9	993.7	997.7	1,891.3	1,938.0
All other	82.3	79.9	247.4	235.8	444.2	431.4
Totals	**499.4**	**486.6**	**1,489.3**	**1,479.4**	**2,776.2**	**2,805.6**

Industrial Production.—Canada's seasonally adjusted index of industrial production (1949 = 100) rose to 172.5 in June from 169.3 in May 1961. This rise brought the index back to its previous peak in January 1960.

The changes in the various index components from June 1960 to June 1961, as well as the month-to-month changes in January-June 1961, were as follows:

	Total industrial production	Total mining	Manufacturing			Total electric power and gas utilities
			Total	Non-durables	Durables	
June 1960	173.3	258.2	157.0	157.3	156.6	277.6
Jan. 1961	165.8	254.6	146.8	154.2	138.3	305.8
Feb. 1961	166.3	253.6	147.6	154.0	140.2	303.9
Mar. 1961	165.5	242.7	148.1	154.3	140.8	302.5
Apr. 1961	168.7	258.4	149.4	156.1	141.5	312.2
May 1961	169.3	266.6	148.4	154.2	141.6	325.5
June 1961	172.5	264.3	152.5	158.7	145.2	323.5

Consumer Prices.—The consumer price index (1949 = 100) rose from 129.0 to 129.1 between the beginning of July and August 1961. Increases in the food, transportation recreation and reading, and tobacco and alcohol components more than outweighed declines in the clothing, and health and personal care components. The housing component remained at the same level.

The food index rose from 124.9 to 125.3 as a result of higher prices for bread, eggs, some fresh and canned fruits, coffee, powdered skim milk, pork and some beef cuts. Lower prices were recorded for most fresh vegetables, particularly potatoes and tomatoes, and for oranges, bananas, weiners, turkeys and some cuts of beef.

Changes in the various components of the C.P.I. in the June-August period of 1961 were as follows:

	August	July	June
All items	129.1	129.0	129.0
Food	125.3	124.9	123.5
Housing	132.9	132.9	132.9
Clothing	112.1	112.2	112.5
Transportation	139.0	138.7	141.2
Health and personal care	154.6	155.1	155.0
Recreation and reading	145.4	145.0	145.8
Tobacco and alcohol	116.1	115.8	115.8

Wholesale Trade.—Sales of Canadian wholesalers in June 1961 were estimated at $837.1 million, compared with $817.5 million in June 1960. Sales were higher than a year earlier in May and lower in each of the previous four months, which led to a decline from $4,539.7 million in the first half of 1960 to $4,418.9 million in the first half of 1961.

Labor Income.—Canada's paid workers received about $1,657 million in June as salaries and wages and supplementary labor income, compared with $1,593 million in May 1961 and $1,590 million in June 1960. Labor income in the January-June period rose to $9,292 million in 1961 from $9,019 million in 1960.

Employment and Earnings.—Canada's composite index of industrial employment (1949 = 100) rose to 121.0 in June from 117.2 in May 1961 but declined from 123.0 in June 1960. Employment was at a higher level in all industrial divisions; increases in forestry, construction and manufacturing accounted for most of the over-all gain.

Average weekly wages and salaries rose to $78.59 in June from $78.00 in May 1961 and $75.74 in June 1960. The composite payroll index rose to 223.2 in June from 214.6 in May 1961 and 218.2 in June 1960.

CORRECTIONS

In "He Who Has a Small Farm," by J. Zeman, in the August 1961 issue, please read:

(*a*) *in 1959 and in the Rosetown area in 1960* instead of *in 1959 and 1960,* in line 2, paragraph 2, page 83.

(*b*) *studied in 1960 included 76 instead* of *studied included 110,* in line 1, paragraph 3, page 83.

(*c*) *Rosetown* instead of *Davidson,* in line 1, fifth full paragraph, page 85.

(*d*) *All of the 76 farmers in our studies were interviewed* instead of *Of the 110 farmers in our studies 76 had been interviewed* in lines 1 and 2 of the fourth full paragraph, page 87.

(*e*) *and 34 of these as part,* instead of *and 34 of these as part,* in line 3, of the fourth full paragraph.

(*f*) *semi-retired* instead of *semi-return,* in line 14 of the sixth full paragraph on page 88.

(*g*) *Rosetown* instead of *Davidson* in line 1 of the second full paragraph on page 89, the first line on page 90, and the third line of the last paragraph on page 90.

LAND USE AND FARM INCOME IN PRINCE EDWARD ISLAND[1]

D. DYCK

Information on land use and on farm and family income in Prince Edward Island, in 1959, was collected as part of a broader socio-economic study of the rural areas of the province. That study was conducted, jointly, by the Rural Sociology Unit of the Economics Division of the Canada Department of Agriculture and the P.E.I. Department of Agriculture. Relevant data were secured from a random sample of 288 farm operators.

A. Factors Affecting Land Use

Land utilization is not solely an economic problem; physical, biological and important social aspects also enter into an adequate analysis of the use of land resources. In the Prince Edward Island study farmers were asked for (1) the crop acreages on their farms in 1959, (2) the major changes they had made in the acreage needed to various crops since 1941 or since they started to operate the farm, and (3) the reasons for these changes.

In this section of our article we shall analyze the changes in land use and the reasons for such changes on individual farms.

Climate and Soils of Prince Edward Island[2].—Prince Edward Island has a relatively moderate climate which is influenced by the proximity of all parts of the province to the sea. The mean annual precipitation is about 43 inches, varying from 32 to 55 inches, and this is fairly evenly distributed throughout the year with an average monthly precipitation of about 3.6 inches. The mean annual temperature is about 42°F, with monthly means varying from about 70°F in August to 15°F in February. Extreme fluctuations in temperature are not common. The average frost-free period, according to data collected at Charlottetown, is 155 days with a range of from 131 to 187 days.

Soils are the product of a number of factors, some of which are climate, plants, parent material, topography and drainage. These factors have resulted in the development of the Podzols as the dominant group of soils in Prince Edward Island. They are strongly leached soils, relatively low in plant nutrients and strongly acid in reaction. Although there are soils on the Island with a more favorable acid content, this advantage is offset by less favorable drainage conditions.

Most of Prince Edward Island soils have a high percentage of sand and consequently they can be classed as fine sandy loam. The percentages of silt compared with clay are also high in some soils. This high silt and sand content contributes to an erosion problem on about eight per cent of the Island land area. Moreover, the low clay content is partly the cause of low moisture-holding capacity; about 31 per cent of the land area is comprised of soils in which moisture conditions are to some degree the limiting factor in crop growth.

Thus, the major soil problems in Prince Edward Island are low natural fertility, excessive acidity, erodibility and unsatisfactory soil moisture conditions. According to the tentative land-use classification in the Soil Survey of Prince Edward Island report published in 1950, 56.7 per cent of the total land area is well suited for a wide variety of crops and is capable of producing good yields of the crops generally grown in the region. The main crops are potatoes, grain, hay and pasture. Another 2.6 per cent of the land area is also capable of producing good yields but is more restricted in its crop adaptability. Thus, with the exception of four lots (8, 11, 54 and 60), most of the area included in the sample lots of this study is part of the area capable of producing good crops. In lots 8, 11, 54, and 60, however, more than half of the land area has less productive soils (with some non-agricultural land) and crop yields are only fair to poor (lots 8, 54, and 60 are in Area II, lot 11 in Area III).

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[1] Preliminary and subject to revision.

[2] The material in this section is based on information available in Whiteside, G.B., *Soil Survey of Prince Edward Island*, Experimental Farms Service, Canada Department of Agriculture in co-operation with the Prince Edward Island Department of Agriculture, Charlottetown, 1950.

Present Land Use on Survey Farms.—The improved area on survey farms in 1959 comprised 57 per cent of the total farm area, on the average. The proportion of the improved area in crops, pasture and other improved land, by area and economic class of farm, is shown in Table 1.

Forage (hay and pasture) comprised the largest proportion of the improved area in each sample area.[1] Oats and other grain (on all farms, oats was the most common grain neded) comprised the largest proportion of the non-forage acreage. Regarding the potato acreage, it is evident that small-scale and part-time farmers produce this product primarily for home use; about two per cent of their improved area was in potatoes and only four small-scale and 20 part-time farmers reported some income from this crop.

Table 1.—Proportion of Improved Farm Land in Crops, Pasture and Other Improved Land, by Area and Economic Class of Farm, Prince Edward Island Study, 1959

	Potatoes	Oats and other grain	Hay	Other crops[a]	Improved pasture	Other improved land[b]	Total
	—per cent of improved land area—						
Area—							
Area I	7	27	34	1	27	4	100
Area II	6	22	34	2	29	7	100
Area III	4	15	39	1	27	14	100
Area IV	7	22	37	1	26	7	100
Economic class of farm—							
Small-scale	2	8	55	—	16	19	100
Part-time	2	10	38	1	29	20	100
Commercial	7	26	33	1	29	4	100
All farms	6	23	35	1	28	7	100

[a] This category includes turnips, vegetables and fruit. In areas I and IV more than half of this land was in turnips and vegetables, in the other areas more than half of the acreage was in fruit.

[b] Other improved land is land reported as idle.

The area planted to other crops (i.e. small fruits, turnips and vegetables) was relatively small on all farms. From the standpoint of income fruit was the most important of these crops; on an average, farmers obtained about one per cent of their cash farm income from turnips and vegetables and about five per cent from fruit.

Commercial farmers had a larger area per farm, on the average, in hay and improved pasture than non-commercial farmers; commercial farmers had 54 acres of forage, part-time farmers had 35 and small-scale farm operators had 26 acres. Since livestock and livestock products are a major source of Prince Edward Island farm income, the larger farms would be expected to have a larger area in forage. However, the acreages on the various types of farms are not in proportion to the number of head of forage consuming livestock kept on them. Commercial farmers had about 16 head of cattle and six sheep, whereas part-time farmers had four head of cattle and three sheep and small-scale farmers averaged only one head of cattle per farm. Also, the non-commercial farmers had relatively little income from the sale of hay; part-time farmers averaged $17 and small-scale farmers received $7 from hay sales. This suggests that land reported in forage crops on these farms is not fully utilized. Evidently the respondents reported most of the land left idle as hay and pasture land. The development of this situation will be considered in the section on land use changes.

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[1] Area I—area where an increase in both number of farms and improved acreage had occurred.

Area II—area where a decrease in number of farms and improved acreage, in similar proportions, had occurred.

Area III—area where the number of farms had decreased by a smaller percentage than the improved acreage.

Area IV—area where the number of farms had decreased by a larger percentage than the improved acreage.

Potato and grain crops were reported by most of the farmers visited; 75 per cent (217) of the respondents reported potatoes and 81 per cent (233) reported grain. Ninety per cent of the commercial farmers had planted potatoes in 1959 and 97 per cent had seeded some grain; for part-time farmers the proportions were 61 and 61 per cent respectively, and for small-scale farmers they were 31 and 35 per cent. Most of the commercial farmers who had no potatoes planted in 1959 were located in areas I and II.

Major Changes in Land Use, 1941-1959.—Analysis of changes in land use on individual farms over a period of time involves consideration of the changes in the proportion of the total farm area which is under cultivation, changes in the acreages seeded to various crops, and of the variations in the crop acreages as the area under cultivation on the farm is increased or reduced. The respondents in the Prince Edward Island survey were asked to indicate the major changes in crop acreages which they had made on their farms since 1941 or since they had started to operate their farm. These changes were recorded in terms of increases or decreases, and whether crops had been added to the cropping system or discontinued (Table 2). Also, the respondents were asked to state their reasons for making the changes.

Table 2.—Farms Reporting Changes in Acreages of Potatoes and Grain, Number of Farms by Economic Class, Prince Edward Island Study, 1959

	Farms which never produced potatoes or grain[a]	Farms reporting[b]	Changes reported			
			Increase	Added enterprise	Decrease	Discontinued enterprise
	—number of farms—					
Small-scale and part-time—						
Potatoes	21	74	3	0	16	28
Grain	23	72	4	1	11	24
Commercial—						
Potatoes	4	189	17	1	42	15
Grain	3	190	11	1	25	2
All farms—						
Potatoes	25	263	20	1	58	43
Grain	26	262	15	2	36	26

[a] Time period during which the respondent operated the farm.

[b] Farms on which potatoes or grain had been produced at some time.

In general, information on land use changes on survey farms was obtained for the 1941-1959 period, or for the years that the respondent had occupied his holding. Thus 156 respondents (54 per cent) indicated changes in land use on their farms during 1941-1959; they had occupied their present holdings before 1941. The other 132 operators had operated their farms for an average of about 11 years; 31 had acquired their present farms during 1941-1945, 49 during 1946-1950, 36 during 1951-1955, and 16 had started to operate their farms since 1955.

Sixty-six operators (60 on commercial farms) had increased their cultivated or improved area during their occupancy by increasing the size of farm; 50 of the 66 had increased the cultivated area by less than 50 acres and on only four of the farms had the increase been of 100 acres or more. Most of these changes (46) had been made since 1950. The farmers who increased their cultivated area were distributed by areas as follows: 25 (27 per cent) in area I, 21 (22 per cent) in area II, 10 (15 per cent) in area III and 10 (30 per cent) in area IV. The average age of these 66 operators was 49.8 years, about three years less than the average for all farmers in the survey.

Nine of the survey respondents had decreased the cultivated area on their farms during their occupancy; five of these were on non-commercial farms located in areas I, II and III, three of the commercial farmers were in area II and one in III. Four of the farmers had decreased their cultivated area by less than 25 acres; the other decreases ranged from 25 to 100 acres. The average age of operators who decreased their size of farm was 64.4 years.

No major changes were reported in the proportion of the total farm area classed as improved. Also, the subsequent analysis of factors affecting changes in crop acreages does not include the cases where a change in the crop acreage had been made in the same direction as a change in cultivated area. Thus, regarding the potato and grain crops, 122 farmers (75 commercial) had varied their potato acreage and 79 (39 commercial) had changed their grain acreage.

Generally, a larger proportion of the farmers reporting production had made changes in the potato than in the grain acreage. This was the case in each of the areas as well as for all farmers as a group. Since the grain produced is commonly oats for livestock feed, these changes suggest that Prince Edward Island farmers vary their cash crop areas (potatoes) more than their livestock enterprises. However, in the case of both grain and potatoes, the number of farmers discontinuing the enterprise or decreasing the crop area exceeded the number who added the crop to their cropping system or increased the area in the crop.

The reasons for changes in crop areas, as stated by the survey respondents, are summarized below.

Eighteen commercial farm operators grew more potatoes in 1959 than in previous years. Of these, seven had increased their potato acreage in an effort to increase income; three increased their potato area as more family labor became available (i.e. as their children grew up); one had reorganized his production program so as to include potatoes; and three stated various other reasons.

The most frequently mentioned reasons for a reduction in the potato area by the operators were the farm labor situation and price conditions. Twenty-three commercial farmers had made the change because of the unfavorable labor situation on their holdings; they did not have enough family labor, the operator was in poor health or in semi-retirement, or had obtained nonfarm work. Fifteen operators of commercial farms said that low and variable potato prices had induced them to reduce the area planted to potatoes, and ten other farmers referred to both prices and labor availability. In addition, seven commercial farmers gave various reasons for reducing their potato acreage, such as the termination of a land lease and the reorganization of the production program on their farm in favor of other enterprises. (Two did not state their reason).

Grain production had been increased on 12 commercial farms and decreased on 27. The operators who increased their grain area did so mainly in the process of reorganizing their production program to include more livestock or to produce more of the required livestock feed. (One did not state his reason). As in the case of potatoes, most of the reductions in grain acreage were made because of the labor situation on farms and price conditions. Eleven operators said they did not have enough family labor for livestock production and thus to utilize the grain produced. Reference was also made to the old age or poor health of the operator. One commercial farmer mentioned low returns as his reason for reducing the grain acreage, and six mentioned both low returns and lack of labor. Four other operators had reduced livestock production, two thought they could buy grain at a lower price than the cost of production, and one had less land in 1959 than previously because his land lease had expired. (Five operators did not state their reason).

Only three non-commercial farmers had increased their potato area; one of these had done so in anticipation of higher potato prices. Of the 44 who had decreased their potato acreage, 32 said that the labor situation on their farm had induced them to make the change, eight referred to the low prices of potatoes, and two said that both the labor situation and low prices had induced them to reduce or discontinue potato production. (Two mentioned other reasons).

Five small-scale and part-time farmers had increased the grain acreage on their farms; one to increase income, one because more family labor became available, one because of personal preference, and one because he had obtained more land. (One did not give any reason). The decreases in grain acreages on non-commercial farms had been induced mainly by the labor situation; 30 of the 35 farmers referred to this factor in terms of lack of family labor, old age or ill health, shifting into nonfarm work, etc. Only one of these operators referred to the low returns received in previous years as the reason for a reduction in grain acreage and four mentioned various other reasons. (One did not state his reason).

Considering the areas in forage (hay and pasture), these were increased or decreased on the survey farms as the acreages in other crops were changed. A total of 114 farmers (60 on commercial farms) had made some change in the forage area on their holdings. Most of the commercial farmers in this group (49) had made this change as a result of some reorganization in their production program; 35 had increased their forage area to obtain more livestock feed and 14 had reduced their hay and pasture acreage to grow more of the other crops. On the other 11 farms a reduction in the potato and grain area had been made and the land was left idle; six of the operators were in semi-retirement and five had obtained nonfarm work.

Of the 54 small-scale and part-time farmers who had changed their forage area, nine had increased it to obtain more livestock feed and six decreased the area to grow more of the other crops. Thus, a total of 39 non-commercial farm operators had reduced their potato and grain acreage and left the land idle; 15 of these had obtained nonfarm work and the others made the change because of the unfavorable labor situation on their farm.

In general, the labor situation on farms and price conditions were the factors mentioned most frequently as the causes of changes in the acreages in potatoes and grain. In a few cases the fact that more family labor became available was the inducement to increase the acreage in these crops; in most cases, however, the lack of farm labor led to a reduction in the acreage. Some respondents said that they lacked help in terms of family labor; other farm operators were in poor health, or of old age, or had taken on a nonfarm job. Price conditions were more often the reason for changes in the potato than in the grain acreage, and they were more often referred to by commercial farmers than by small-scale and part-time farmers as the reason for acreage changes in these crops. Most of the commercial farmers interviewed retained their improved land area in production, but 39 (41 per cent) of the small-scale and part-time farmers had allowed some of the improved land in their farms to go idle.

B. Farm and Family Income

Analysis of the income received by the survey respondents and their families was made in terms of farm income and total family income, the latter including income from nonfarm sources of the operator and his family as well as income from farm products.

Income from Farming.—The 49 operators of small-scale farms received income from the sale of farm products amounting to only one per cent of their total family income. Thus, although these holdings may be classed as farms for certain purposes, farming is actually a very small part of their operations. Therefore, the following discussion of income from farming will be confined to the 239 part-time and commercial farms included in the study. On the average these 239 farmers received $2,830 from the sale of farm products; the part-time farmers obtained $585 and the commercial operators $3,365. The commercial farmers in area I had the highest income, and this is accounted for by the larger area of improved land and more livestock, on the average, than farmers in the other areas.

The net cash farm income, as calculated in this study, is the gross income less the expenses for feed, seed, fertilizer, hired labor, gas and oil for the farm operation, land rent, machinery repairs, and hired machinery. The average farm income, after deducting these expenses, was $1,932 for commercial farms and $346 for part-time farms. The variation in net income between areas was considerably less than the variation in gross income. The expenses incurred comprised a similar proportion of the gross income for all part-time and commercial farmers, 59 and 57 per cent respectively. (These data are summarized in Table 3).

In addition to producing for the market, the survey respondents also produced for their own consumption. Valued at prices received on the farm and including house rent, income in kind amounted to $658, on the average, for the 288 farmers. The amount varied from $434 for small-scale farmers to $495 for part-time farmers, and $753 for commercial farmers.

In connection with the gross and net cash farm income, it is of interest to note the farm products from which the income was derived. Dairy products and cattle sales together accounted for about 40 per cent of part-time and commercial farm income and potatoes, the major cash crop, accounted for 29 per cent. Thus, two enterprises were the source of 69 per cent of the total farm income and nine other enterprises accounted for about 31 per cent. In total, livestock and livestock products accounted for 60.5 per cent, crop and forest products for 39.3 per cent and other farm income for 0.2 per cent. These data are similar to D.B.S. data on farm cash income for Prince Edward Island in 1958.

A total of 212 farms (89 per cent) reported sales of dairy products and cattle, and 192 (80 per cent) reported income from potatoes. Hog sales were reported by 149 farmers (62 per cent), although the income derived from this source comprised less than 10 per cent of the total. Similarly, poultry and

Table 3.—Gross and Net Cash Farm Income, Part-time and Commercial Farms, by Area, Prince Edward Island Study, 1959

	Number of farms studied	Average gross farm income	Average net cash farm income[a]	Per cent that net is of gross
		—dollars—		
Area I—				
Part-time	9	780	498	64
Commercial	67	3,827	2,079	54
Area II—				
Part-time	15	550	377	69
Commercial	76	3,318	1,871	56
Area III—				
Part-time	18	517	286	55
Commercial	24	2,826	1,850	65
Area IV—				
Part-time	4	582	154	26
Commercial	26	2,807	1,803	64
All part-time	46	585	346	59
All commercial	193	3,365	1,932	57
All farms	239	2,830	1,627	57

[a] Gross income minus expenses for feed, seed, fertilizer, labor, gas and oil used in farm operations, land rent, machinery repairs, and hired machinery.

poultry products accounted for about nine per cent of the receipts and were produced by 100 of the part-time and commercial farm operators (42 per cent).

About half of the respondents producing in excess of $250 worth of agricultural products for the market specialized in one enterprise to the extent that more than 50 per cent of the total farm income was derived from it. Thus, a total of 92 operators (38 per cent) obtained more than half of their farm income from dairy products and cattle sales, 40 (17 per cent) obtained a similar proportion from potatoes, and 10 (four per cent) had fruit sales accounting for more than 50 per cent of their gross farm income. Only fruit production showed any evidence of being concentrated in one particular area, all of the other products were produced on some farms in each area. Fruit (mostly strawberries) was produced for sale in lots 37 and 38, areas II and III respectively. These two lots also comprise the major fruit producing area in the province, a fact which probably accounts for the larger percentage of income derived from fruit on the survey farms compared with the percentage for all farms in Prince Edward Island (Table 4).

Family Income.—Family income, as defined for the purpose of this study, includes (1) net income from the sale of farm products; (2) income of the operator and his wife from off-farm sources, and (3) income from off-farm sources of single sons and daughters living at home but not paying board and room. Where children pay for board and room, only the amount so received is counted as family income, and (4) income of married children, grandchildren, parents of the operator or his wife and others living in the household with the operator as their permanent place of residence, unless they pay board and room in which case only the amount so received is included as family income. Expenses incurred at fishing and mail hauling (gas and oil) were deducted from the income obtained from these sources; 23 respondents reported income from fishing and 21 had some income from hauling mail.

Table 4.—Sources of Farm Income; Number and Per Cent of Farms Reporting Income from Each Source; and Proportion of Total Farm Income from Each Source, Part-time and Commercial Farms, Prince Edward Island Study, 1959, and All Farms in the Province

Source	Farms reporting		Per cent of total farm income	
	Number	Per cent of farms studied	Survey farms	All P.E.I. farms, 1958
Cattle and/or dairy products	212	89	39.9	36.7
Hogs	149	62	9.7	13.8
Poultry and/or poultry products	100	42	9.1	8.7
Sheep and wool	43	18	1.8	0.7[a]
All other livestock products	—	—	—	0.5
Potatoes	192	80	29.1	31.3
Fruit	21	9	5.2	1.1
Grain	38	16	0.9	1.1[b]
Turnips	30	13	0.8	—
Hay	18	8	0.3	—
Vegetables	11	5	0.3	1.1
All other crop products	—	—	—	3.0
Forest products	74	31	2.7	2.0
All other	4	2	0.2	—
Total			**100.0**	**100.0**
All livestock and livestock products			60.5	60.4
All crops			36.6	37.6
Forest products			2.7	2.0
All other			0.2	—
Total			**100.0**	**100.0**

Source:—Computed from "*Farm Cash Income, 1960*", D.B.S. data.

[a] For the Province, this item is designated as sheep and lambs.

[b] For the Province, this item is designated as oats.

Only 21 of the families, all on commercial farms, had not obtained any income from off-farm sources.

The average cash income of the 288 farm families amounted to $2,565, and about one half of this amount was obtained from off-farm sources. Small-scale farmers obtained the lowest income per family ($2,026) and almost all of this amount came from nonfarm sources. Part-time farmers had an average income of $2,411 and commercial farm families $2,739, and these two groups obtained 14 and 68 per cent, respectively, of their income from the sale of farm products. There was little variation between areas in the income obtained by commercial farm families. Similarly, the income of families on part-time farms varied only from $2,036 in area II to $2,708 in area III. Considerable differences however are noted in the income of families on small-scale farms, varying from $963 in area II to $2,363 in area I. The area I group of small-scale farmers thus obtain more income than some of the part-time and commercial farmers (Table 5).

Further information on the distribution of income among the survey respondents and their families is presented in Table 6. These data show that 43 per cent of the families received less than $2,000 in 1958. The group with less than $1,000 in cash income included 36 operators who averaged 63.2 years in age and three of whom were widows. The operators obtaining $3,000 or more in cash income were younger than the respondents as a group; they averaged 47.9 years in age.

Table 5.—Family Income, Average by Area and Class of Farm and Percentage Obtained from Farm Product Sales, Prince Edward Island Study, 1959

	Number of farms studied	Average family income[a]	Net cash farm income in per cent of family income
		—dollars—	
Area I—			
Small-scale	17	2,363	—
Part-time	9	2,507	31
Commercial	67	2,890	69
All families	93	2,757	—
Area II—			
Small-scale	5	963	—
Part-time	15	2,036	19
Commercial	76	2,657	70
All families	96	2,472	—
Area III—			
Small-scale	24	2,107	—
Part-time	18	2,708	11
Commercial	24	2,935	62
All families	66	2,572	—
Area IV—			
Small-scale	3	1,246	—
Part-time	4	2,262	7
Commercial	26	2,405	65
All families	33	2,282	—
All small-scale	49	2,026	1
All part-time	46	2,411	14
All commercial	193	2,739	68
All families	288	2,565	51

[a] This includes net cash farm income as defined previously, and all other income less expenses for fishing and mail hauling where applicable.

The distribution of family income within the areas is similar to the distribution for all families. Considering the $2,000 to $2,999 income category as the average, area I had the highest proportion of families (35 per cent) with above-average income and area IV the lowest proportion (18 per cent). Thus, with reference to Table 6, it is seen that relatively more of the families in the area with the highest farm income (area I) also received above average family income. Conversely, in area IV the farm income was lowest and the proportion of families having above average income was also lowest. The proportion of families on small-scale farms obtaining an average income ($2,000 to $2,999) was smaller than the proportion on part-time farms, and only half as large as the percentage of families on commercial farms. Similarly, the proportion of families on non-commercial farms receiving above average incomes was smaller than the proportion on commercial farms.

The proportion of income received from farm product sales according to the family income categories varied from 24 to 59 per cent. Families with an income of from $1,000 to $4,999 received 50 to 59 per cent of it from the sale of farm products, but families with less than $1,000 obtained only 24 per cent and those with an income of $5,000 or more obtained 40 per cent of it from the farm. Nineteen of the 36 families having less than $1,000 of income obtained it primarily from pensions—14 received old-age pensions and five some other type; 11 had income from some off-farm job, five from farming, and one reported family allowances as his only source of cash income.

There were 21 families with incomes of $5,000, or more; in 11 of these the operator himself had obtained the money, in the other 10 it was the operator and one or more members of the household. Six of the 21 families received all their income from farming; the others did various types of non-farm work such as carpentering, fishing, road work and trucking.

In general, the major farm expenses incurred by commercial farm operators amounted to 43 per cent of their gross income, and this proportion varied from 35 to 46 per cent among areas. Income obtained from off-farm sources affected both the general level and the distribution of income obtained by the survey respondents and their families. About one half of the total income reported was received from sources other than the sale of farm products, with commercial farmers obtaining about one third of their income from such sources. Families on small-scale farms obtained $2,026 on the average, about $400 less than part-time farmers and $700 less than commercial farmers.

Levels of Living.—The long-term income is one of the determinants of the level of living enjoyed by a family. In the case of commercial farmers, family

Table 6.—Net Cash Income Distribution of Farm Families, by Area and Economic Class of Farm Prince Edward Island Study, 1959

	Less than $1,000	$1,000-1,999	$2,000-2,999	$3,000-3,999	$4,000-4,999	$5,000-and over	Total
	—per cent of families—						
Area I	11	27	27	18	12	5	100
Area II	8	33	32	17	4	6	100
Area III	23	24	24	11	7	11	100
Area IV	12	42	28	9	0	9	100
Small-scale	41	23	16	8	4	8	100
Part-time	15	39	24	8	7	7	100
Commercial	5	29	32	18	9	7	100
All families	13	30	28	15	7	7	100

Table 7.—Average Level of Living Scores and Percentage Distribution by Low, Medium and High Scores, Families by Area and Economic Class of Farm, Prince Edward Island Study, 1959

		Percentage distribution		
	Average score	Low (15 or less)	Medium (16-19)	High (20-26)
		—per cent of families—		
Area I	17.0	31	39	30
Area II	17.2	29	39	32
Area III	18.3	20	40	40
Area IV	17.2	39	24	37
Small-scale	16.4	33	34	33
Part-time	15.8	48	33	19
Commercial	18.0	23	39	38
All families	17.4	29	37	34

income depends primarily on the farm situation—its physical characteristics, type, efficiency of management, and the price and market of farm products. In the case of part-time farmers, income depends partly on the farm and partly on the nonfarm job situation, and the level of income obtained by small-scale farmers is primarily a function of the nonfarm job situation. Another determinant of a family's level of living is the length of time that the family has been settled on a productive farm, or that the family members have been established in a nonfarm job. The tastes and preferences of the family are also relative to the level of living attained; these depend on the family's inherent characteristics, as modified by the existing environment.

The level of living scale developed by F. M. Edwards[1] provides a measure which reflects the long-term accumulation of material and cultural possessions, and participation of family members in group activities. This measure of level of living includes the use of goods acquired in past years as well as currently purchased goods and services. The scale includes 27 household items; the highest possible score is 27 and the levels shown by the scores are relative.

The average level of living score (according to the Edwards scale) for the respondents in the 1959 Prince Edward Island survey was 17.4[2]. The commercial farm families had a higher level of living than the others, and they also had a higher income on the average (Table 5). Part-time farm families however, had a lower level of living and a higher income than the families on small-scale farms.

LAND VALUES IN MANITOBA, 1959

L. M. Johnson

For a few years now, the Winnipeg regional office of the Economics Division has been collecting information on land values in Manitoba. In 1959, for example, the office sent a mail questionnaire to 120 farm real estate agents, lawyers and municipal clerks in the province, and also obtained most valuable information from the Veterans' Land Act Administration and the Manitoba Agricultural Credit Corporation. Our respondents supplied data on prices at which land was sold, the number of acres sold, the number of improved acres per sale, and the condition of the farm buildings. They also commented on activities in the land market.

The respondents reported on 288 sales. This number of sales certainly does not correspond to the total number of sales in Manitoba in 1959, and there is no easy way to find out what these 288 sales are as a proportion of all sales. Nevertheless, they may well be numerous enough and well enough distributed throughout the province to supply a reliable indication of average land prices.

Land Values in 1959

As a help to our discussion of land values, we have divided the agricultural part of the province into five broad areas. (Figure 1 and Table 1).

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[1] Edwards, F. M. *A Scale for Rating Socio-Economic Levels in Rural Western Canada*, Economics Division, Canada Department of Agriculture and the University of Alberta, August 1946.

[2] In the *Special Study of Ontario Farm Homes and Homemakers, 1959*, the average score for Ontario families was 23. In other studies made in Alberta, Manitoba and New Brunswick during 1952-1956, the average scores were 17, 16 and 22, respectively.

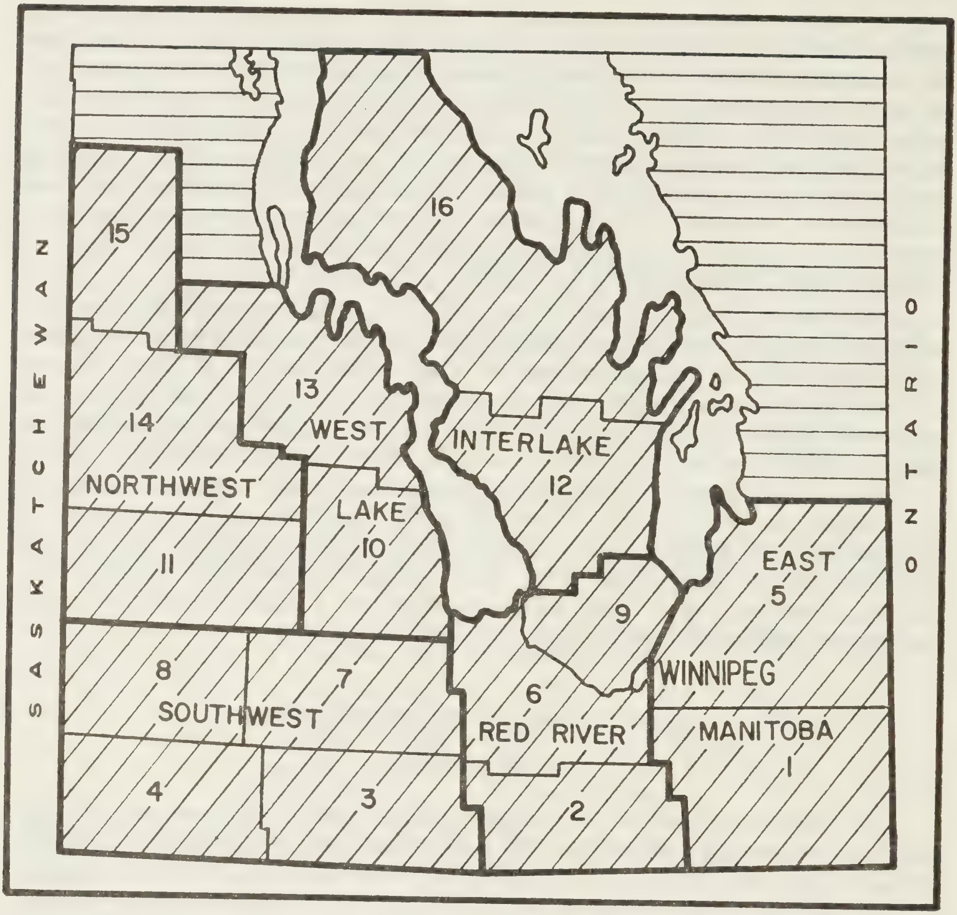

Figure 1.—Census Divisions, Southern Manitoba.

Table 1.—Census Divisions Included in the Study Areas, Total Farm Acreage, Proportion of the Total Acreage in Improved Land, Number of Farms, and Average Size of Farm, Manitoba, 1956

Area	Census divisions	Total acres	Per cent improved	Number of farms	Average size of farm
		'000	per cent		acres
Southwest	3,4,7,8,	5,452	68	10,898	500
Red River	2,6,9	3,549	83	11,451	310
Northwest	11,14,15, part 16[a]	3,815	59	9,759	391
West Lake	10,13	2,208	58	5,684	388
Interlake-East Manitoba	1,5,12, part 16[b]	2,908	45	11,409	255
All areas	—	17,932	64	49,201	364

Source:—*Census of Canada, 1956.*

[a] Includes Local Government District of Mountain.

[b] Includes all of Census Division 16 except [a] above.

Land Prices.—Each of the five areas was large enough and included lands that varied widely enough in quality or value to enable us to classify sales according to the quality of the land (Table 2). As an indicator of quality, we used that proportion of the total acreage of a given parcel of land that had been improved. Land prices were closely associated with that proportion of the total acreage which was in improved land. Price variability according to land quality was particularly evident in the Interlake-East Manitoba district (Table 2). Sales of parcels of high quality soil, 67-99 per cent in improved land, averaged $40 an acre whereas parcels with only from one to 33 per cent of the acreage in improved land averaged only $11 an acre.

The southwest district reported an average price of $29 an acre[1] in 1959. About two-thirds of the prices fell within a range from $12 to $46 an acre.

Price variations as percentages of the average, for the five areas, were as follows:

	Average price —dollars—	Coefficient of variability[2] —per cent—
Southwest	29	59
Red River	57	42
Northwest	27	52
West Lake	21	62
Interlake-East Manitoba	26	92
All Manitoba	35	71

The lowest variation in prices was in the Red River Valley where two-thirds of the prices paid for land were between $33 and $71 an acre, or 58 to 142 per cent of the average. In the Interlake-East Manitoba district where variation was highest about two-thirds of the prices were between $2 and $50 an acre, or between eight and 192 per cent of the average. The average price for all Manitoba was $35 an acre. About two-thirds of the prices were between $10 and $60 an acre, with the other one-third falling outside of these limits.

Prices varied more widely in some of the five districts than in others because of several reasons. First, variations in land quality are greater in some districts than in others. In the Red River Valley land is generally of a more uniform quality than in the Interlake-East Manitoba region. In the latter region land is generally lower in quality, although some areas have very good soils. Second, the relative importance of buildings in the different areas may account for some variations in value.

Land prices reported from the Red River Valley district were about twice as high as prices reported from other districts in Manitoba (Table 2). However, about 90 per cent of the land sold in this district was improved, as compared with 70, 63, 64, and 49 per cent in the Southwest, Northwest, West Lake, and Interlake-East Manitoba districts, respectively. The proportion of the land improved, by district, approximates fairly closely the amount of all land reported as improved in the 1956 Census for each of these districts (Table 1). Other factors contributing to higher land prices in the Red River Valley district were the relatively high-quality soils and possibilities for growing and marketing special crops such as sugar beets and sunflowers.

Types of Buyers, Prices Paid and Sizes of Purchases.—About three in five purchases had been made to add to the size of existing farm units (Table 3).

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[1] The average price used was the total price paid for the parcel divided by the total acres in the parcel. The average price reported includes sales, both with and without buildings.

[2] The term "coefficient of variability" is applied to the standard deviation when it is expressed as a percentage of the average. In this case, it shows price variation as a percentage of the average price.

Table 2.—Land Values per Acre According to Area and Proportion of Improved Land, 288 Farm Land Purchases, Manitoba, 1959

Per cent of improved land	Number of purchases	Average acres per purchase	Average per cent improved[a]	Price paid per acre[a]	Standard deviation[b]	Coefficient of variability[b]
				dollars	dollars	per cent
SOUTHWEST—						
Nil	3	—	—	—	—	—
1—33	4	360	25	13	—	—
34—66	14	354	57	23	9	39
67—99	35	311	83	34	17	50
100	4	275	100	42	—	—
Total	**60**	**320**	**70**	**29**	**17**	**59**
RED RIVER—						
Nil	2	—	—	—	—	—
1—33	1	—	—	—	—	—
34—66	3	—	—	—	—	—
67—99	47	268	91	59	21	36
100	29	157	100	59	22	37
Total	**82**	**229**	**90**	**57**	**24**	**42**
NORTHWEST—						
1—33	4	276	21	12	—	—
34—66	14	281	54	22	11	50
67—99	18	229	78	35	13	37
Total	**36**	**254**	**63**	**27**	**14**	**52**
WEST LAKE—						
Nil	4	160	0	11	—	—
1—33	5	417	20	15	—	—
34—66	10	271	53	17	12	71
67—99	18	211	86	29	8	28
100	5	144	100	22	—	—
Total	**42**	**237**	**64**	**21**	**13**	**62**
INTERLAKE-EAST MANITOBA						
Nil	9	168	0	4	3	75
1—33	12	295	16	11	6	55
34—66	25	188	49	25	23	92
67—99	18	203	83	40	22	55
100	4	218	100	60	—	—
Total	**68**	**210**	**49**	**26**	**24**	**92**
ALL MANITOBA—						
Nil	18	187	0	6	5	83
1—33	26	320	20	12	8	67
34—66	66	269	53	24	20	83
67—99	136	258	85	43	22	51
100	42	172	100	53	25	47
Total	**288**	**248**	**69**	**35**	**25**	**71**

[a] Not shown when less than four sales reported.

[b] Not shown when less than eight sales reported.

We could not determine, from answers to our questionnaire whether the buyers expanding the size of their farm holdings were "practicing farmers" or non-farmers investing in land. Nonetheless, it is more than likely that most of them were "practicing farmers." The average size of purchases made by these buyers was 208 acres and the average price $33 an acre, buildings included. Seventy-five per cent of them had bought less than 250 acres. As much as 57 per cent of the purchases made by the "expanding" buyers did not include any building.

Table 3.—Number of Purchases and Average Size of Purchase by Area and Two Types of Buyers, Manitoba, 1959

Area	"Expanding" buyers			"Non-expanding" buyers		
	Purchases		Average size	Purchases		Average size
	number	per cent	acres	number	per cent	acres
Southwest	33	55	244	27	45	412
Red River	51	62	210	31	38	259
Northwest	21	58	241	15	42	273
West Lake	26	62	186	16	38	320
Interlake-East Manitoba	40	59	182	28	41	250
All areas	**171**	**59**	**208**	**117**	**41**	**303**

Most of the other buyers were, presumably, people who were starting to farm or who had previously rented a farm; others were people interested in land only as a source of investment for their funds. What strengthens us in the belief that most of the "non-expanding" purchasers were beginning farmers is the fact that the average size of their purchases amounted to 303 acres—about 50 per cent more than for purchases by those who wanted to increase the size of their units—and that 85 per cent of the "non-expanding" buyers acquired land with farm buildings.

On the whole, non-expanding buyers paid five dollars more an acre, for the land, than "expanding" buyers. This variation in prices may be explained, at least in part, by the fact that 85 per cent of the "non-expanding" buyers and only 43 per cent of the "expanding" buyers purchased land and buildings together. Moreover, the "non-expanding" buyers also bought better buildings.

Table 3 shows the average size of purchase, in each of the five areas, made by each type of buyer. The number of buying farmers, as a proportion of the total, who purchased land to increase the size of their uints, was about the same in all five areas. On the average, "expanding" farmers bought about two thirds as many acres as "non-expanding" farmers. Taking all purchases into consideration we find that, in four areas, the average acreage purchased was much under the average acreage of existing farms. In the Interlake-East Manitoba district it was about the same, but one must note here that one single sale of as much as 1,440 acres had a great weight on the average for the whole area.

Additive Value of Buildings.—Forty per cent of the 288 sales were sales of land, without buildings, and 51 per cent with some buildings (information not available for the remaining nine per cent). Table 4 shows that of the 147 sales with buildings, 25 per cent of the buildings were classed as poor, 51 per cent as fair, and 24 per cent as good.

Table 4.—Additive Building Value and Proportion of Value Attributed to Buildings According to Condition of Buildings, 263 Farm Land Purchases, Manitoba, 1959

	No buildings	Condition of buildings			All sales with buildings
		Poor	Fair	Good	
Number reporting	116	37	75	35	147
Average price paid per acre $	31	32	38	52	40
Average additive value per acre $	0	4	7	13	8
Average size of purchase ac.	174	282	311	327	307
Average percentage of improved acres	67	71	72	74	72
Building value as a percentage of total price	0	12	18	25	20

The additive value of buildings was calculated by subtracting the respondent's estimate of bareland value from the total price paid. On the average, land with buildings sold for eight dollars an acre more than land with no buildings. The over-all value attributed to buildings was 20 per cent of the total price. The additive value of fair buildings was almost twice that of poor buildings, whereas good buildings added three times as much as poor buildings.

The average size of sale was 307 acres for land with buildings compared with 174 acres for land with no buildings. About 60 per cent of all sales, without buildings, were made to "expanding" buyers who purchased 160 acres or less. One may very well assume that these buyers already had buildings on their present farms and could not find much if any use for additional buildings. They would also, presumably, buy smaller land parcels than operators who purchase a complete farm unit.

Buyer-Seller Relationships.—Fifty-one of the 288 transactions reported were between persons related by blood or marriage bonds. Thirty-three of these transactions (between relatives) were of the father-to-son type. The average size of land sold to relatives was 193 acres compared with 257 acres for sales to non-relatives; average prices were $31 and $36, respectively. Relatives usually bought fewer acres and paid less for their land than non-relatives, despite the fact that the quality of the land and the condition of buildings was about the same in both cases. There might well be some hidden financial obligation in these transactions, such as wages owing to a son, which do not show up in the price of land.

Land Market Activity

Respondents were asked what changes they had noticed in the farm land market in 1958 and 1959. Twenty-six of 41 respondents said that the amount of land offered for sale had remained the same, seven thought it had increased and eight reported a decrease. Of 32 respondents who replied to the question on changes in demand for land, 16 thought the demand had increased, six mentioned a decrease and 10 reported no significant change.

The following comments were made by respondents:

"Increased credit available from government agencies has caused a rise in price of land. This trend will increase with freer credit available, unless controlled by the purchasers. Demand will also increase in view of available credit."

"No doubt more land will change hands with the assistance of the Manitoba Agricultural Credit Corporation."

"Demand for farm lands stays fairly constant. Most of my sales in the past few years were made with a very small cash payment."

"Very few people interested in land just now."

"Natural hazards plus marketing restrictions have resulted in land prices leveling off."

"Plenty of demand but not very many would-be purchasers with enough cash; most sellers want 40 to 50 per cent cash."

"Fair demand, farms that could be sold are not for sale, also shortage of cash payment."

"Demand is growing."

"Most inquiries are from people with not enough cash."

"No incentive to buy land at present, produce prices too low compared with machinery prices, taxes, and operating costs."

"Land market very poor, expect prices to drop or many farmers will have to give up and move off."

"Very few farms sold, owing to the fact that farmers are asking for too much money."

"Many farmers are looking for land to increase their holdings and expand present operations. Trend in this area is to larger farms, and fewer farmers."

"Only people buying are farmers with good equipment and with sons staying home. They are enlarging their farms."

Table 5.—Price Per Acre and Number of Purchases According to Percentage of Acreage in Improved Land, Year of Sale and District, Manitoba, 1956 to 1959

Per cent improved	1956		1957		1958		1959	
	Purchases	Price per acres	Purchases	Price per acres	Purchases	Price per acre	Purchases	Price per acre
	number	dollars	number	dollars	number	dollars	number	dollars
SOUTHWEST—								
0	3	[a]	4	12	4	8	3	[a]
1—33	1	[a]	6	17	3	[a]	4	13
34—66	21	21	27	25	30	22	14	23
67—99	37	34	52	36	39	33	35	34
100	4	28	4	52	6	46	4	42
Total	**66**	**28**	**93**	**32**	**82**	**28**	**60**	**29**
RED RIVER—								
0	1	[a]	3	[a]	2	[a]	2	[a]
1—33	1	[a]	4	16	2	[a]	1	[a]
34—66	3	[a]	7	29	8	31	3	[a]
67—99	31	59	59	61	23	51	47	59
100	22	85	28	67	32	68	29	59
Total	**58**	**66**	**101**	**57**	**67**	**55**	**82**	**57**
NORTHWEST—								
0	1	[a]	3	[a]	0	[a]	0	—
1—33	4	15	4	11	4	10	4	12
34—66	40	27	25	24	44	23	14	22
67—99	28	40	45	40	27	37	18	35
100	0	[a]	0	[a]	2	[a]	0	[a]
Total	**73**	**31**	**77**	**32**	**77**	**28**	**36**	**27**
WEST LAKE—								
0	5	6	0	[a]	7	5	4	11
1—33	2	[a]	9	16	1	[a]	5	15
34—66	13	16	8	14	11	24	10	17
67—99	23	38	22	38	23	35	18	29
100	1	[a]	3	[a]	2	[a]	5	22
Total	**44**	**27**	**42**	**28**	**44**	**27**	**42**	**21**
INTERLAKE-EAST MANITOBA								
0	3	[a]	11	10	8	2	9	4
1—33	3	[a]	12	10	17	16	12	11
34—66	10	25	11	44	19	29	25	25
67—99	24	60	15	56	9	40	18	40
100	8	46	12	59	8	66	4	60
Total	**48**	**44**	**61**	**37**	**61**	**28**	**68**	**26**
ALL MANITOBA—								
0	13	11	21	10	21	5	18	6
1—33	11	11	35	14	27	13	26	12
34—66	87	24	78	27	112	24	66	24
67—99	43	46	193	46	121	38	136	43
100	35	69	47	61	50	62	42	53
Total	**289**	**39**	**374**	**39**	**331**	**33**	**288**	**35**

[a] Not calculated—less than four sales.

"The good farms in this area are not for sale, and there are few for sale of any kind."

"There is an increased interest in buying. Demand 80 per cent for mixed farms, some demand for stock farms."

"Better demand for good livestock farms, some expansion of grain farms."

"Too large a spread between Farm Loan Board appraisal and estimates of value made by farmer—buildings necessary for farm operations are not considered part of farm deal."

"Good buildings help a sale if a new client is moving in; buyers now are much more cautious, offers received are less than prices asked in the majority of cases."

Summary of Land Values, 1956 to 1959

Land Price Changes, 1956 to 1959.—Table 5 was organized to show estimates of land values, made in 1959, and variations in prices per acre since 1956, by districts and for Manitoba as a whole.

Prices varied widely within some districts and between districts but not very much, taking the province as a whole. The average price, for all sales reported to our office, moved from $39 an acre in 1956 and 1957 to $33 in 1958 and $35 in 1959. (A word of caution must be given here. Differences in number of sales reported from year to year undoubtedly affect data on price variations). The greatest variations in prices occurred in the Interlake-East Manitoba area where average prices dropped from $44 to $26 an acre. However, 72 per cent of the land sold there in 1956 and only 49 per cent of that sold in 1959 was improved land. Differences in the quality of the land surely accounted for much of the difference in prices. In the Southwest area, price variations were almost insignificant. In the Red River area, prices had dropped from $66 in 1956 to $57 in 1957, $55 in 1958, and $57 in 1959, even though the proportionate acreage in improved land was about the same. Smaller price declines occurred in the West Lake and Northwest areas; there, also, the acreage in improved land had remained about the same proportion of the total acreage.

Average Size of Land Purchases.—Table 6 clearly illustrates the fact that the distribution of land purchases in the 1956-59 period, according to size, varied only very slightly from year to year. About the same may be said for the average size of all purchases. Over half of the sales, each year, were sales averaging about one half-section in size and about one-third were sales averaging a little over two quarter-sections in size. As the size of the acreage

Table 6.—Average Size of Some Farm Land Purchases and Percentage Distribution of Purchases, According to Size of Purchase and Year of Purchase, Manitoba, 1956-59

Acres purchased	1956		1957		1958		1959	
	Per cent of purchases	Average acres per purchase	Per cent of purchases	Average acres per purchase	Per cent of purchases	Average acres per purchase	Per cent of purchases	Average acres per purchase
Up to 85	9	66	10	71	10	70	7	76
86—250	51	163	55	162	54	171	57	166
251—490	34	341	32	335	33	332	30	345
491 and more	6	739	3	638	3	686	6	732
Total	**100**	**243**	**100**	**223**	**100**	**230**	**100**	**248**

Table 7.—Additive Value of Buildings and Proportion of Value Attributed to Buildings, Farm Land Purchases, Manitoba, 1956-59

	1956		1957		1958		1959	
	No buildings	With buildings	No buildings	With buildings	No buildings	With buildings	No buildings	With buildings
Number reporting	108	181	132	242	136	195	116	147
Average price paid per acre.......$	37	40	34	42	28	37	31	40
Average additive building value per acre.......$	0	11	0	11	0	8	0	8
Average size of purchase........ac.	193	272	184	244	177	259	174	307
Percentage of land improved	69	74	65	73	61	69	67	72
Additive building value as a percentage of total price	0	28	0	26	0	22	0	20

sold increased, the average price paid per acre generally decreased. However, one must note that the larger parcels of land usually had a lower proportion in improved land.

Additive Value of Buildings, 1956-59.—Table 7 shows that in 1956 the additive value of buildings was $11 an acre or 28 per cent of the total price, whereas in 1959 it was eight dollars an acre or 20 per cent of the total price. Although there was no significant change in the condition of the buildings, as reported by the respondents, the additive value of buildings declined by about eight per cent. This may indicate that buildings on a farm are not valued as highly today as four years ago, since many farmers are expanding their present farms. Consequently, because of buildings on the present farmsteads, less value would be attributed to buildings when purchasing additional parcels of land.

WHAT IS ARDA?

The Canada Department of Agriculture has issued an eight-page pamphlet telling us that ARDA is "a rehabilitation program in the making".

It originated in December 15, 1960 when the Minister of Agriculture submitted a Resolution to the House of Commons, introducing the Agricultural Rehabilitation and Development Act, an Act especially concerned with the improvement of the economic position of rural people. The federal government is now enabled to enter into agreements with provincial governments or agencies for the *joint undertaking* of:

> "Alternative uses of lands that are presently classified as marginal or of low productivity.
>
> Development of income and employment opportunities for rural agricultural areas.
>
> Development and conservation of the water and soil resources of Canada."

The pamphlet draws attention to the many problems that stem from the "technological" revolution in agriculture and lists six recommendations made by the Special Committee of the Senate on Land Use in Canada, to deal with the question of marginal and submarginal land.

The following are some of the salient points of the ARDA program:

1. the development of alternative economic uses for marginal agricultural land.
2. the development of new income opportunities for people in rural areas.

3. the undertaking of soil and water conservation projects for agricultural purposes.

The pamphlet also includes a quotation from the Hon. Alvin Hamilton, Minister of Agriculture, reminding the public that

> "It is not the purpose of ARDA to reduce the number of farms. Those who feel that the small farm problem can be resolved by uprooting people arbitrarily from their farms, do not understand the deep attachment of rural people to their home surroundings. ARDA is designed, rather, to help by various means to improve the income and standard of living of the smaller and more marginal farms, and in that way help improve the overall position of agriculture".

The pamphlet has been written "to focus attention on ARDA and foster discussion and study groups on the subject of rural develpoment". Copies are available on request from the Information Division, Canada Department of Agriculture, Ottawa, Ontario.

OTHER PUBLICATIONS

Portugals Finanzen. Geschichtlicher Überlinch Die Finanzreformen Prof. Salazars Steuer—und Staatsschuldenwesen. von Gersdorff, Ralph. Ernst und Werner Gieseking, Bielefeld, West Germany. 1961. pp. XII + 280.

The author reviews and appraises the financial reforms enacted by A. de Oliveira Salazar, as minister of finance, to stabilize the economy of his underdeveloped country. He organizes his discussion of these reforms under the following headings: First financial reforms; Tax reforms and yields before 1953; Other public revenue and review of total public revenue before 1953; and Development and reforms in public debt administration.

Farm Management Handbook. Department of Economics, Bristol I Province, University of Bristol, England. March 1961. pp. VII + 100. Price: 5/.

This farm management handbook is divided into three parts: *Output, Input and Efficiency Standards; Budgeting Reference Manual; and Situation Report.*

Resources for Tomorrow. Department of Northern Affairs and National Resources. Ottawa. July 1961. Two volumes: pp. 1061. Available from the Queen's Printer, Ottawa. Price: $10.00.

The two volumes contain a series of 81 background papers for the Resources for Tomorrow Conference to be held in Montreal, October 23-28, 1961. These papers were prepared under the general direction of M. Miller, Associate Secretary and Director of Research for the Conference. A major share of the responsibility for the assembling and collation of information also rested with a group of research coordinators. The editing of the two volumes was made under the direction of G. P. Boucher, Economics Division, Canada Department of Agriculture.

Volume I contains a paper, *Historical Perspective on the Resources for Tomorrow Conference,* 12 papers on *Agriculture,* 12 on *Water,* and 18 on *Regional Development.*

Volume 2 has nine papers on *Forestry,* nine on *Fisheries,* ten on *Wildlife,* nine on *Recreation,* and one on *Renewable Resources Information and Education in Canada.*

These "papers are intended to place before Canadians the challenging issues that lie ahead in meeting Canada's needs for improved management of her renewable resources."

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION
A. H. TURNER, Director

DECEMBER 1961 Vol. XXXI No. 6

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G. P. BOUCHER, Editor

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Minister of Agriculture

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ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials[b]	Total	Food	
		1935–39=100						1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	223.9	171.6	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960	230.9	221.4	178.4	264.4	242.4	276.7	222.7	128.0	122.2	167.6
1960										
Jan	230.7	221.3	184.9	257.7	240.9	268.7	221.9	127.5	121.6	173.5
Feb	230.2	218.6	185.2	252.0	237.7	....	....	127.2	120.8	170.1
Mar	229.8	220.2	188.2	252.2	237.9	....	....	126.9	119.4	171.7
April	231.5	224.9	193.7	256.2	244.9	279.9	223.4	127.5	120.9	166.8
May	231.6	226.6	195.4	257.8	246.6	....	....	127.4	120.2	167.3
June	232.4	231.7	198.4	265.0	250.7	....	....	127.6	120.8	166.9
July	232.4	228.4	186.7	270.1	252.3	....	....	127.5	120.5	164.0
Aug	230.5	216.3	160.9	271.7	236.5	281.6	222.9	127.9	121.7	165.6
Sept	230.5	217.2	160.7	273.6	239.9	....	....	128.4	123.3	167.6
Oct	230.6	215.6	161.9	269.4	240.2	....	....	129.4	125.8	166.9
Nov	229.9	216.5	161.8	271.2	239.6	....	....	129.6	125.5	165.9
Dec	230.4	219.6	162.7	276.5	242.1	....	....	129.6	125.3	166.0
1961										
Jan	231.3	221.1	163.7	278.5	243.1	271.8	223.5	129.2	124.4	165.8
Feb	231.6	220.5	163.3	277.7	243.8	....	....	128.9	124.0	166.3
Mar	231.3	216.2	162.4	269.9	241.6	....	....	129.1	124.0	165.5
April	230.9	213.0	162.8	263.1	237.5	283.4	226.6	129.1	123.9	168.5
May	231.3	213.8	161.7	266.0	236.4	....	....	129.0	123.2	169.1
June	231.4	216.5	166.8	266.3	239.0	....	....	129.0	123.5	172.7
July	234.5	216.2	165.5	266.8	239.2	....	....	129.0	124.9	175.3
Aug	234.5	214.6	162.6	266.6	237.9	287.8	230.0	129.1	125.2	175.1
Sept	235.3	216.0	159.8	273.7	241.0	....	....	129.1	123.2	....
Oct	235.3	217.3	159.3	275.3	241.0	....	....	124.2	123.3	....

Note:—See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates. 1961 indexes are subject to revision, since tax and interest rate figures are preliminary.

(b) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

ECONOMIC SITUATION IN 1961 AND ECONOMIC PROSPECTS FOR 1962[1]

World Economic Situation.—In general, the world economic situation continued to show signs of recovery and growth during 1961. Industrial activity in the Free World resumed its growth early in the year, after maintaining a high plateau during 1960 when rapid growth in Western Europe and Japan was counterbalanced by a mild recession in North America. Further rises occurred in Europe and Japan in 1961 but the most important contributor to Free World expansion was the recovery in the United States. Various unsatisfactory factors still persist, however. In the United States and Canada unemployment remains high while in Europe labor shortages and inflationary pressures are evident. Moreover, the balance of payments position in the United Kingdom and the United States, while improved, still gives rise to anxiety.

Modest increases in primary commodity prices occurred in 1961, following sharp declines in 1960. The gains, however, were not large enough in many cases to reverse the 1960 losses. Grains, however, showed strength due to strong overseas buying and reduced crops in Canada.

World trade increased about 11 per cent between 1959 and 1960 but the annual rate of growth has since diminished. A notable element in world trade in the past year has been the increase in exchange of goods among the industrial countries of Europe. In contrast, the flow of goods between North America and European countries, in both directions, has been declining.

Trade between industrial countries and primary producers shows no pronounced trend. The value of exports of primary products, which tended to sag during much of 1960, has shown some signs of strength to which the firmer tendency of commodity prices no doubt contributed. These signs were apparent earlier in the case of exports to Europe, than in exports to the United States. In the first half of 1961 Mainland China imported a large volume of grains and other commodities, particularly from Australia and Canada. Meanwhile the imports of primary producers taken as a group changed very little as declines in the imports of some countries, including Australia, offset further increases elsewhere.

Exports of the underdeveloped countries, although somewhat firmer, are still low and their terms of trade show little improvement. A continuing baffling problem is the difficulty of finding export markets that would supply the money needed to meet import requirements.

World Agricultural Situation.—Widespread bad weather brought a fall in output in the year ending June 1961 in Latin America, Eastern Europe and the Soviet Union. Disastrous crop failures occurred in Mainland China. Only small gains were recorded in 1960-61 in North America, the Far East and Africa, while fairly large increases took place in Western Europe.

World stocks of agricultural products continued at high levels in 1960-61. Increases occurred in butter stocks in Western Europe, coffee in producing countries and grains in the four principal grain exporting countries. However, the proportion of world food stocks held by North America fell from 80 to 70 per cent between 1958-59 and 1959-60.

Modifications in agricultural policies and programs were fairly numerous in 1960-61 in both developed and less developed countries. Most changes were, in essence, attempts to match production more closely to demand. Means of achieving this goal differ as between the two groups of countries. In the economically developed countries the main problem was to avoid surplus stock building while in less developed countries the concern was to expand production to keep pace with need.

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[1] From a report prepared for the annual federal-provincial Agricultural Conference, held in Ottawa, November 20-21, 1961.

Canadian Economic Situation.—Within Canada general economic activity strengthened in 1961. The trend in aggregate production turned upward in the second quarter, but increases in total output for the year will be modified by the pronounced decline in grain production. Increased exports continue to give an important stimulus to over-all economic trends. In 1961 there has also been some further growth in expenditures by consumers and governments, an increase in the volume of house building and a further decline in business fixed investment. Employment rose moderately during the year while rates of unemployment declined. The tempo of business activity increased without any significant modification in the nearly stable level of prices over the past two or three years. The June budget of the Government of Canada introduced a variety of measures designed to stimulate both internal and external demand. A major element in this program was the achievement of a reduction in the Canada-U.S. exchange rate. Easier credit conditions which developed during 1960 continued during the first nine months of 1961. The margin of yields of government securities vis-a-vis Canada and the United States has narrowed, especially in short-term securities. The total volume of funds raised by public and private borrowers and from chartered banks, although higher than in 1960, continued to run well below the high levels reached in 1959 and substantial increases occurred in bank assets and in the money supply.

Agricultural Situation in Canada.—Reduced grain production in the Prairie Provinces in 1961 resulted in an estimated decline of 25 per cent in the index of production of all farm commodities. However, returns to farmers from the sale of farm products are expected to be as high in 1961 as in 1960, despite the drought in the Prairie provinces. Wheat marketings, in the first seven months of 1961, were running slightly ahead of marketings in the corresponding period of 1960. Carryover of stocks of wheat on farms at July 31, together with the 1961 crop, should provide enough to maintain marketings at the 1960 level in the last five months of 1961. Larger marketings and higher prices will lead to higher returns from flaxseed. These gains will be offset, to some extent, by smaller marketings of coarse grains. Income from tobacco will reach an all-time record level in 1961, as a result of the record-breaking output of flue-cured tobacco in Ontario in 1960 and the large crop in 1961.

Income from livestock and livestock products was well maintained in 1961. The orderly adjustment of livestock numbers in the Prairie Provinces, as a means of coping with dry weather and short pastures, contributed to increased livestock marketings with little or no break in prices. Farmers marketed fewer hogs but the smaller marketings were offset by much higher prices.

Poultry meat producers realized higher returns, because of a greatly increased output. Egg production may be slightly lower than in 1960 but the lower output will be more than offset by higher prices. Abundant pastures in the major dairy producing areas pushed milk production to new high levels and average prices changed very little.

Payments under the provisions of the Prairie Farm Assistance Act may reach a record level of $60 million for the 1961 crop. Present plans call for the payment of a large part of this amount before the end of 1961.

The decline in grain production in the Prairie Provinces is expected to lead to much lower stocks on Prairie farms at the end of the year, and to a lower net farm income. Farm net income in Canada, in 1961, is expected to decline to the 1957 level of about $1 billion.

The continuing increase in farm operating expenses will also contribute to the drop in net income. The index of prices paid by farmers for commodities and services used in the farm business continues to edge upward. Total shipments of prepared feeds are expected to rise above the 1960 level and sales of fertilizers increased by about ten per cent in 1961. Sales of machinery repair parts increased by about five per cent during the first six months of the year. Farm wages continued to increase and the number of hired workers declined very little from 1960. These higher costs will be offset, to some extent, by much lower share rent payments in the Prairie provinces, as an outcome of the smaller crops.

World Economic Outlook.—From an over-all point of view, the development of the world economy in 1961 was encouraging, and the outlook is now more promising than at this time last year.

Government spending will reach record high levels, because of the tense international situation and civilian needs. Consumer spending has been rising steadily and may continue to do so in 1962. The U.S. economy has moved into a new period of expansion, and U.S. authorities are anticipating a record level of activity. The gross national product will increase by about seven per cent from the fourth quarter of 1960 to the corresponding quarter of 1961. The upward trend in business spending, for fixed investment and inventories, should continue over several quarters ahead. Exports should benefit from the growing prosperity of Europe and Japan, the improving trade position of some raw materials-producing countries, and additional measures to liberalize imports from the dollar area.

Growth of total output in Western Europe is expected to continue though at a somewhat lower rate than in 1960, because of the very high levels of employment and capacity utilization which have already been reached. The restraints imposed in the U.K. in July do not appear to have ruled out significant further expansion in that country. In Western Europe as a whole short-term economic prospects appear to be ruled by a very strong pressure of consumer demand, which stems from the rising level of incomes and the backlog of demand for cars and other durables. Business investment, on the other hand, may slow down somewhat from the exceptionally fast rise in 1961. The tight labor market situation is driving up wages. There are signs of increasing pressure on prices and the period of price stability is probably coming to an end. The volume of industrial output may very well rise significantly in 1962 and another expansion in the area's internal trade and imports is thus likely to occur in 1962. The improvement in business activity in North America should have favorable repercussions on European exports.

While the phenomenal rate of growth of the Japanese economy has continued, a deterioration in the trade balance, a loss of reserves, and the increase in prices had led the authorities to impose restraints. The Economic Planning Agency of Japan would like to see a reduction in industrial expansion in the 1961-62 fiscal year and if this is to be accomplished, a tapering-off of the rate of growth of capital investment will have to occur. This would ease the strains on the balance of payments.

It seems logical to expect that total demand in the major industrial countries will continue to expand over the next 12 months. This should have favorable effects on primary producing countries. Moreover, the world payments situation now appears closer to equilibrium than it was in the period of disturbing capital movements which began in mid-1960. On the other hand, primary producers will be further disappointed if the maintenance of a high level of world industrial activity continues to be so little reflected in increases in commodity prices. Longer-time prospects are also affected by uncertainties arising from the application of the U.K. and other countries to join the European Economic Community and the results that may ensue for the pattern of world trade.

World Agricultural Outlook.—The rise in world agricultural production is likely to continue in 1961-62, but the rate of growth may be small. In many countries there will be continued food shortages, especially in the Far East and Communist Asia.

A further expansion in world wheat trade is forecast for the 1961-62 crop year. Import needs will be larger than in 1960-61 in Western Europe and parts of Asia, especially Mainland China. The long-term upward trend in utilization of grain for animal feeds is also likely to continue. Exports of coarse grains in 1961-62 are expected to regain the level reached two years ago. On the other hand, a decline in world trade in meat is anticipated, as well as a lowering in prices.

World dairy production continues to increase and surplus problems no doubt will persist. The reduced apple crop in Europe in 1961 will result in a much greater import demand and imports from North America are expected to increase.

Economic Outlook for Canada.—Economic conditions have improved in Canada since the second quarter of 1961. With a moderate strengthening in principal demands on the Canadian economy, 1962 should be a year of significant further gains in industrial output and employment.

In a situation of generally strong world trade Canadian merchandise exports are expected to rise and exceed the record level reached in 1961. The American economic recovery in 1961 has already been reflected in an improvement in our sales to the United States. These gains are expected to continue, with prospects of further economic strengthening in the U.S. in 1962. Overseas markets for the most part remain buoyant and moderate increases in exports are again likely in several important areas. Some temporary slowing in exports to the U.K., and possibly to one or two other markets, may occur because of domestic restraints adopted in recent months for balance-of-payments reasons.

Business investment has shown evidence of a moderate strengthening since the early months of 1961, and it is reasonable to expect that levels of spending on new plant and equipment will be fairly well sustained. There is ample capacity in most industries to meet a moderate growth in demand. The pace of inventory accumulation by business is also likely to be moderate. Investment in social capital—houses, schools and institutions—increased in 1961, reflecting to some extent a relative easing in money rates. Strengthening in this sector of investment may continue in 1962.

Personal spending on goods and services rose in 1961, reflecting increases in income available for consumption outlays and a continuing rise in outstanding consumer debts. A strong external demand for Canadian products and a firm trend in domestic investment would help reinforce these upward trends in 1962.

Economic Outlook for Canadian Agriculture.—The interplay of various economic factors in the world and in domestic markets will affect the income position of Canadian farmers in 1962, but domestic production, especially of western grain crops, will be the dominant factor. International trade in wheat, coarse grains and oil seed crops in 1962 should be larger than in 1961. The export market for Canadian apples is bright. Domestic demand for Canadian agricultural products should continue strong and the upturn in the United States economy is also a favorable factor.

The short Western 1961 crops will adversely affect cash income from grains during the first half of 1962. Farm stocks of wheat will be insufficient to maintain the rate of deliveries established in the January-June period of 1961 and marketings of coarse grains will be greatly reduced. Should grain crops reach the ten-year average level in 1962, there would then be enough wheat to compensate for smaller spring deliveries as well as maintain fall marketings at the 1961 level. Supplies of barley would also be fairly adequate, but oats available for marketing would be limited.

Better weather and pasture conditions in 1962 than in 1961, in Western Canada, could lead to a slight over-all reduction in marketings of cattle and calves, because of a hold-back for the restocking of herds. Western cattle marketings might also be somewhat lower as a result of the heavy marketings of cattle in this area in 1961 and of the demand for Canadian feeder cattle by U.S. buyers. On the other hand, if drought conditions continue, farmers would be forced to reduce cattle holdings. Marketings would then increase and prices could move downward.

Hog marketings during the first half of 1962 may exceed marketings during the corresponding period of 1961, but prices are likely to be slightly lower. Lower prices would cause a reduction in farrowing in the first half of 1962 and in a consequent reduction in fall marketings.

Production of eggs may increase during the first half of 1962 and prices may drop seasonally, but not quite as much as in the early months of 1961. Poultry meat production may increase somewhat, but the rate of grain will be lower than in 1961. Income from dairying may gain moderately as a result of a slightly higher output.

Net Income of Farm Operators from Farming Operations

	Average 1949–53	Average 1954–58	*a* 1959	*a* 1960	*b* 1961
			—million dollars—		
Cash income	2,597	2,547	2,789	2,783	2,896
Income in kind	322	330	344	350	356
Supplementary payments	10	21	22	77	63
Realized gross income	2,929	2,898	3,156	3,210	3,315
Operating and depreciation	1,435	1,690	1,880	1,888	1,932
Realized net income	1,494	1,208	1,276	1,322	1,383
Value of inventory change	133	26	−70	36	−397
Total gross income	3,062	2,924	3,086	3,246	2,918
Total net income	1,627	1,234	1,206	1,358	986

a Preliminary.
b Estimate.

In 1961 the size of farm income stemmed chiefly from production and the size of carryover stocks of farm products. In 1962, grain stocks will have been greatly reduced and the size of farm income will therefore depend more on growing conditions. Given favorable weather, farm cash income in 1962 could be as high as in 1961. A crop equal to the ten-year average and income from other commodities as high as in recent years would result in 1962 net farm income regaining the level of $1.3 billion reached in 1960. However, a repetition of the poor 1961 crop would result in greatly reduced cash income in 1962 as compared with 1961 and in net income no higher than the billion-dollar mark. Farm operating expenses are expected to continue to expand in 1962. A further increase in farm wage rates will likely occur and the volume of purchases of farm supplies will be as great or greater than in 1961.

MILK CONSUMPTION IN UNITED STATES SCHOOLS

DONALD OKE

Schools in the United States are an important part of the national milk market. In 1958 they accounted for almost four per cent of total sales of fluid whole milk. School distribution of milk receives government encouragement under two schemes: the National School Lunch Program and the Special Milk Program, both of which are large and well organized. There is nothing comparable in Canada. What school milk and lunch services exist here are locally organized and on a small scale.

Milk consumption must be seen in relation to both the milk and the lunch programs. The complete noon meal service is now a distinctive part of the American school system. The milk program supplements the lunch program, and its effects cannot be understood separately.

The National School Lunch Act of 1946 established the machinery for a permanent program of school meals. Under the Act the U.S. Department of Agriculture sets standards of nutrition and sanitation, and provides certain funds and commodities. These are distributed by State education authorities, who are responsible for the direct administration of the program. Participating schools agree to operate on a non-profit basis, to serve hot meals that meet specified standards, and to serve them free or at a reduced cost to children unable to pay in full.

The Special Milk Program was enacted in 1954 to supplement the National School Lunch Program. It was designed simply to increase milk consumption by children, through the lowering of prices and the providing of more frequent service. Federal funds reimburse schools up to four cents per half-pint sold. (The maximum rate is on sales in N.S.L.P. schools for milk additional to the half pint provided with the meal.) The cost to the child is correspondingly reduced. The program applies to public and private schools, at or below the high school level, as well as to summer camps, nursery schools, orphanages and other non-profit child care institutions.

Although either the National School Lunch Program or the Special Milk Program apply separately, schools commonly participate in both programs. It might also be noted that in addition to schools participating in the two federally sponsored programs, there are schools providing lunch and milk services without government aid. These non-subsidized schools make up about 14 per cent of the total number of schools with services.

Numbers Participating.—The extent of the programs is shown in a study done in 1957 by the United States Department of Agriculture (1). Detailed information covering the month of March was obtained from 4,347 of the 105,966 public elementary and secondary schools, with the data from the sample being projected to represent the total U.S. public school population. In March 1957, 80 per cent of U.S. public school children had access to some type of lunch service. A complete plate lunch of the N.S.L.P. was available to 68 per cent, other complete plate lunches to 10 per cent, and some type of partial lunch, soup, etc., to three per cent. Thirty-three per cent of the public school population actually received complete meals daily (on the basis of average numbers per day during the month). In the N.S.L.P. schools taken by themselves, however, this rate was 45 per cent. Students paid on the average 24.3 cents for the N.S.L.P. complete meal, which included one half-pint of milk.

During March 1957 a milk service, either with a lunch or by itself, was available to more than 90 per cent of the public school enrollment. Milk consumption under all programs averaged 19.5 million half-pints (eight fluid ounces) a day. Among the 32.7 million public school students, this is the equivalent of one half-pint a day for 60 per cent of the enrollment. Considering only schools with the services, 72 per cent of their enrollment participated. Fifty-two per cent of all milk was consumed with the lunch service, 38 per cent in schools with a lunch service but in addition to the actual meal, and 10 per cent in schools with no lunch service. The average price paid per half-pint was 2.9 cents for milk with the N.S.L.P. meal where the S.M.P. also applied, 3.1 cents for all S.M.P. milk, and 5.9 cents for all non-subsidized milk.

The trend over its 13 years of operation has been one of growth in the lunch program. Average daily participation during the peak month (public and private schools, N.S.L.P. only) was 7.0 million children in 1947 (2) and 13.5 million in 1960 (3). The increase, though, largely reflects the increase in school attendance, since the number participating compared with total school enrollment, has been fairly constant, in the neighborhood of 30 per cent. The milk program has seen greater proportionate growth. Consumption during its first year of operation, 1955, was 450 million half-pints, and for the following years, successively, 1,394, 1,753, 1,918, 2,176, reaching 2,384 million half-pints in 1960 (2).

Consumption in Schools.—Information on the use of commodities in schools with lunch services is available from a study made by the U.S.D.A., covering the school year 1957-58 (4). Projections were made for all of the U.S. from a sample of 500 schools. The study deals with all eating services in public schools, although it might be noted that 94 per cent of the total value of the food consumed was accounted for by N.S.L.P. schools themselves. Milk sold under the S.M.P. in schools with lunch services is included in the study, but not the milk in schools serving milk only. The figures which follow, therefore, add to the data from the study, corresponding data for "milk only" schools.

The wholesale value of food and milk used in U.S. public schools during 1957-58 was $619 million. This is $19 worth per child, based on total enrollment, or $25 per child, based on average daily attendance in schools with the services. Just over 85 per cent of the food was acquired through commercial channels in nearby markets, the remainder coming from government donations. Forty-seven per cent of the money spent was on milk products, including butter, 35 per cent being for fluid whole milk. The quantity of whole milk consumed per child during the year was 59.8 pounds, based on total public school enrollment, and 78.1 pounds, based on average attendance in schools with the services. For comparison, in schools with a milk but no lunch program, during the same period, consumption per pupil, based on average attendance was 50.1 pounds.

Cost of the Programs.—The estimated total expenditure from all sources for the N.S.L.P. during the 1957-58 school year was about $800 million (5). (Since the N.S.L.P. accounted for 94 per cent of the total value of all food going to schools having a feeding service, this figure might be adjusted upward by about six per cent to approximate the total for all lunch services.) The figure is all-inclusive, except for expenditures by localities with lunch-room facilities. Seventy-eight per cent of this expenditure came from sources within the states, with payments by children amounting to 56 per cent. The Federal share was 22 per cent, or about $174.6 million. It is interesting to note that, over the years, Federal contributions have been decreasing proportionately. In 1947, Federal, State, and child payments for the N.S.L.P. were respectively 34 per cent, 17 per cent, and 49 per cent of the total; in 1953, 26 per cent, 20 per cent, and 54 per cent; and in 1958, 22 per cent, 22 per cent and 56 per cent (6). During 1957-58, the total expenditure for the S.M.P. was $125.8 million, of which Federal sources contributed 52.7 per cent or $66.3 million; the remainder came from payments by children (2).

The Federal government, during the 1957-58 school year, donated to lunch programs 341 million pounds of commodities, valued at $90.8 million. Donations of dairy products (butter, cheese, non-fat dry milk) amounted to 123 million pounds, worth $59.5 million (7). This, then, is a breakdown of the Federal portion of the costs for the two programs in public and private schools: grants under S.M.P., $66.3 million; grants under N.S.L.P., $83.8 million; government surplus commodities donated, $76.0 million; special purchase commodities donated, $14.8 million; total Federal cost, $240.9 million (8). Based on the entire U.S. school population, in public and private, elementary and secondary schools, Federal contributions in 1957-58, for both programs, amounted to $6.28 per child.

Factors Influencing Milk Consumption.—Among the most significant influences on school milk programs is the promotional role of teaching staffs, school officials, and community and government groups. Such leadership and support is not measurable directly, but is essential in establishing and sustaining effective programs.

The price of milk affects rates of consumption. Supporting evidence for this statement may be found in the already quoted U.S.D.A. study of March 1957 (1). The data contained in the report on this study enable us to look at milk programs, while excluding the effects of the lunch services on milk consumption. A group of schools serving milk only, and not benefiting from any subsidy, charged 5.7 cents per half pint (eight fluid ounces), on the average; these schools had a daily rate of consumption of 2.5 ounces per child enrolled. (Consumption figures include milk given free). At the same time, schools with milk services only, but with a government subsidy, charged 3.3 cents per half pint, on the average; these schools had a rate of consumption of 4.4 ounces.

Of interest are the following comments on the pricing of school milk, made by the writers of a Wisconsin report (9): "In many instances school boards will find that the total receipts from school milk will actually increase despite reduced prices. In all instances, any decline in receipts from reducing prices will be small. The (percentage) increase in consumption tends to be much greater compared with the (percentage) price reduction where the price of school milk is reduced 50 per cent or more than where the reduction is small. In fact, school officials probably can make greater improvement in consumption by making changes in such items as improved availability, than by small reductions in price".

The existence of a lunch service in schools affects milk consumption. In U.S. schools which had both the N.S.L.P. and the S.M.P., the rate of consumption was 6.0 ounces per child enrolled (1). Schools which participated in the S.M.P., but without a lunch service, had a consumption rate of 4.4 ounces.

Making milk available frequently during the day affects consumption. The average daily consumption in schools which served milk, at noon only, was 4.8 ounces per pupil (1). The rate was 6.4 ounces in schools with more frequent service.

Children in rural areas drink more milk in school than urban children. A study done by the U.S.D.A. in 1959 (10), sampling 8,444 children in the northeastern U.S., found that daily consumption in schools was 5.9 ounces for a child in a rural area of less than 2,500 inhabitants, and 5.1 ounces in larger areas. The study pointed out that the pattern of home consumption, though, is the reverse: 16.4 ounces daily, per child, in rural areas, and 21.3 ounces in more densely populated areas.

The size of school also affects consumption. Schools with less than 250 pupils had a daily rate of 7.2 ounces per pupil, those with 250 to 499 pupils, 5.6 ounces, and those with more than 500 pupils, 4.8 ounces (1). Younger children consume more milk. Elementary schools used 5.6 ounces per child, and junior and senior schools, 4.8 ounces.

Chocolate flavoring serves to increase milk consumption, the availability of soft drinks tends to reduce it. During 1957-58, chocolate (whole) milk accounted for 10 per cent of the fluid milk consumed in schools with lunch services. Chocolate drink (skim), which is not eligible for the subsidy, accounted for less than 0.5 per cent. In 1955, some elementary schools in Los Angeles made chocolate drink available. Total consumption in these schools averaged 5.3 ounces a day per pupil. The rate was 4.5 ounces where plain milk alone was sold (11). This pattern, however, did not hold for junior and senior high schools. Of 50 schools under the S.M.P., that were sampled by the U.S.D.A. in 1959, three had soft drinks available for pupils (10). The daily consumption of milk per child in these schools was 3.5 ounces, compared with 5.4 ounces in schools serving milk only.

Just under 18 per cent of the public schools with a feeding service in 1957-58 had some sort of vending machine (4). Twenty-six per cent of the schools with machines had milk vendors; 79 per cent had soft drink machines; 23 per cent, candy machines; 12 per cent had machines for crackers, etc. Data are meagre on vending machines and on rates of consumption associated with their use. They seem to influence consumption in that they make milk available throughout the day, and they may have an initial effect of novelty. The influence of vending machines on rates of consumption would not, however, seem to be a major consideration for or against their use.

Justification of the Programs.—School milk and lunch programs are said to produce five benefits. When nutrition is considered, school programs can supplement inadequate diets. As educational tools, they offer concrete situations in which dietary principles are applied, a value in a child's schooling, and, in the long run, to nutrition in the community. They are a convenience for children who do not go home for lunch, either because of the consolidation of school districts, or the employment of mothers away from home, or the high volume of city traffic. They are important for agriculture, as a means of disposing of farm surpluses, and, of more permanent value, as a means of enlarging the market for farm commodities. These five points are used to justify school programs.

Data on nutritional levels in the United States have not been assembled here. Those who have studied the situation, however, are not complacent. They make generalizations with caution, but point out the existence of poor meal habits and of widespread dietary inadequacies. Such findings have given incentive to the establishment of school programs. It is evident, though, that of a total of 1,100 meals 200 would consist of school lunches. Among school children of fairly good physical condition, the effects of such lunches are not greatly pronounced.

Poor diets in a land of abundant food would seem to be a paradox. It is said that levels of nutrition are unsatisfactory so long as people, generally, select foods, not on the basis of nutritional needs, but on the basis of food habits conditioned by ignorance and indifference. The most promising approach in dealing with nation-wide health problems would seem to be education. School feeding programs are useful as an opportunity for children to apply school lessons in health, and as a means for them to develop sound dietary habits.

Lunchroom facilities and lunch and milk services are a convenience for students who do not go home at noon. In March 1957, 68 per cent of U.S. public schools had more than half of their children and 30 per cent had the entire enrollment staying at noon. Sixty-five per cent of the schools had some children coming in buses, and 43 per cent had more than half of the children using this means of transportation. In 89 per cent of the schools, some children brought bag lunches, and in 55 per cent this was done by more than half of the children. Commercial lunch services were patronized by students from 21 per cent of the schools, and in three per cent of the schools more than half of the students were getting such lunches (1). It is an open question if the function of schools includes a feeding service for children. At any rate, the extent to which American schools have taken on this responsibility, is worthy of note.

The presence of surplus farm commodities served as an incentive to the establishment of both U.S. programs. However, surplus removal can only be of a temporary value, and it does not in itself justify programs of such a scale as those U.S. programs which continue, whether surpluses are available or not. School programs, nevertheless, have been a major outlet for government holdings of food. In 1958 donations to schools, from government stocks, totaled 252 million pounds, which is equal to 29 per cent of all domestic donations of agricultural products and nine per cent of total domestic and foreign donations (13). Quantities going to schools fluctuate from year to year. Since the N.S.L.P. began, surplus commodity donations have ranged from a low of 99 million pounds in 1952 to a high of 418 million pounds in 1957 (8). It will be remembered, that, in addition to donations from stocks of surpluses, the government also makes school donations of especially purchased commodities.

The major benefits to agriculture of the U.S. programs is in expanding and stabilizing markets for farm commodities. As already mentioned, 85 per cent of the foods used in the programs was purchased in local markets. The value of such local purchases for the N.S.L.P. alone increased from $125 million in 1947 (14) to $469 million in 1958 (5). Dairy products constituted a large proportion of the purchases, amounting in 1958 to 47 per cent of the value of all foods consumed in schools. The lunch program has been a major factor in the introduction to nation-wide markets of such new foods as orange juice concentrate, dry milk, and the new type stabilized dried eggs. It has widened the geographical market for some other foods, such as sweet potatoes from the U.S. Southeast, and purple plums from the Northwest. Schools represent a considerable market for livestock products, poultry products, fruits and vegetables (5). Information is lacking, however, on the question of how much this is true market expansion and how much substitution for consumption which would normally take place.

Summary.—Eighty per cent of U.S. public school children had access to some type of lunch service in March 1957. Ninety per cent had access to a milk service. Thirty-three per cent of public school children actually received complete meals daily (based on average numbers per day during the month). Daily milk consumption amounted to the equivalent of one half-pint a day for 60 per cent of the total public school enrollment. The average price paid by students was 24.3 cents for the N.S.L.P. meal, and 3.1 cents per half-pint for S.M.P. milk. Public school children consumed $619 million worth of commodities (wholesale value, all lunch and milk services) during the 1957-58 school year, or $19 worth per child, based on total public school enrollment. Forty-seven per cent of the value of the food was spent on dairy products, 35 per cent on fluid whole milk. On the average, 59.8 pounds of fluid whole milk was consumed per child. Total costs for the National School Lunch Program and the Special Milk Program, in public and private schools, for 1957-58, are estimated at $926 million. The Federal share of the cost was $241 million, 26 per cent of the total, and amounted to $6.28 per child, on the basis of total public and private school enrollment.

Price reduction increases milk consumption. The percentage rise in consumption tends to be larger than the percentage reduction in price after a 50 per cent reduction. School and community promotion is essential to an effective program. Lunch services in schools increase the use of milk. Making milk available frequently during the day affects consumption rates. Per caput milk consumption in schools is greater in rural areas, in smaller schools, and among younger children. Chocolate flavoring increases milk consumption, the availability of soft drinks reduces it. The influence of vending machines, as such, on the level of milk consumption, would not be a relevant consideration for or against their use. The U.S. programs fill five needs: improved nutrition, better education in nutrition, convenience to students not able to go home for lunch, reduction of farm surpluses, and expansion of the market for farm commodities.

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NEWS FROM THE FARM CREDIT CORPORATION

The Farm Credit Corporation, established under the Farm Credit Act of 1959, replaced the Canadian Farm Loan Board, established in 1929 under the Canadian Farm Loan Act of 1927. It grants "long-term farm mortgage credit designed to meet the needs of Canadian farmers operating under modern conditions."

In its report for the fiscal year ended March 31, 1961 we find that 5,597 loans amounting to $60.7 million were approved in 1960-61, compared with 5,339 loans amounting to $40 million in 1959-60. The average size of loans rose from $7,498 to $10,846. That part of the loan money which was used to purchase or to improve land rose from 33.6 to 59.9 per cent. The total value of loans outstanding rose from $120.2 million to $162.4 million.

The report is more than a compendium of statistical data. It also tells us about the various problems of the Corporation—organization and administration problems as well as policy matters.

FARMER'S VIEWS ON RURAL LIFE IN PRINCE EDWARD ISLAND

D. DYCK

Much of the information obtained in the 1959 Prince Edward Island study[1] pertains specifically to the situation on individual farms and to the people residing on these farms. General information on conditions in the respondents' communities was also obtained; it relates primarily to the movement of the rural population, land use, community facilities, and to some of the social aspects of living in the rural areas of Prince Edward Island. Respondents were also asked to indicate what they thought was needed to improve their communities.

Since the information relating to community conditions was obtained mainly in the form of opinions, an indication of the framework of reference of the respondents should be helpful in the interpretation of answers[2]. Attitudes, social values and other aspects of the respondents' outlook are indicated, in part, in the opinions given on the chief advantages and disadvantages of living in rural areas.

Opinions on the Advantages and Disadvantages of Living in Rural Areas.—Of the 288 farmers interviewed 282 commented on the chief advantages of life in a rural community. These advantages were found mainly in the non-material aspects of rural life and may be summarized as follows, with the number of respondents commenting on a certain type of advantage, in brackets within the text or at the end of paragraphs.

1. **Personal satisfactions.** Some respondents made particular reference to farming as an occupation. They talked about their enjoyment of it in such terms as "I like farm life", "I can stop work when I want to", "I like to see things grow", "I'm very fond of farming", and "I appreciate the independence that the farmer has", "I like everything about rural life", "the country is my home", and "I enjoy the country". (219 respondents).

2. **Closeness to nature.** The advantage of being close to nature was related to the personal satisfactions derived from rural life. Reference was made to outdoor life and work" "the beauty of nature", "the open spaces", "the fresh air", and the restful nature of rural living (139 respondents).

3. **Family unity and child rearing.** More than one-fifth of the respondents said that one of the chief advantages of rural life was the conditions it afforded for rearing children and unifying family interests and activities. They spoke of these advantages in terms such as "rural living affords the best conditions for raising a family", "rural life is better (or safer) for children", and "a rural family lives as a unit". (63 respondents).

4. **Economic advantages.** Some farmers could detect economic advantages from living in rural areas, that could not be found in cities. On the farm you have "a place to live when you reach retirement age", you may produce all the vegetables, milk, butter and eggs required by your family, and you pay lower taxes (29 respondents). Some respondents (21) also referred to the personal satisfactions, the closeness to nature, and the advantages associated with family unity and better conditions for rearing children described in the preceding three paragraphs.

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[1] See *Land Use and Farm Income in Prince Edward Island* in the October 1961 issue of *The Economic Annalist.*

[2] One of the factors contributing to the general outlook of an individual is travel. Of the 288 respondents, 67 (23 per cent) had never been away from the Island, and 53 had never traveled outside the Atlantic Provinces.

5. **Sociability of rural people.** People in rural areas have "more social connections", "there is a more sociable life in rural areas", "there are friendly and helpful neighbors in the country", and "you get something in rural areas which is not available in cities" (18 respondents).

6. Most respondents compared rural and urban living when stating their opinions but others merely expressed a liking for rural life, saying that "rural life is better than city life" or "I would rather live here than in town". (Six respondents).

In contrast to the advantages, most of the disadvantages mentioned concerned some tangible aspect of rural living such as income and community and farm facilities. Opinions on disadvantages were given by 250 respondents.

1. **Economic factors associated with farming as an occupation.** Respondents spoke of various aspects of farming conditions in Prince Edward Island. Frequently mentioned were the low and variable returns from farming and the uncertainty pertaining to crop yield and prices of farm products. Reference was made also to difficulties experienced in obtaining farm labor and to the resulting labor conditions on farms—long working hours for the operator and his family and no relief from chores on Sunday. Another disadvantage mentioned was the difficulty in getting established in farming. (126 respondents).

2. **Scarcity or poor quality of community facilities.** Next to economic factors associated with farming, the conditions regarding community facilities were most frequently mentioned as disadvantages. Roads, electricity, telephone and schools were the facilities mentioned most frequently. Reference was made to the difficulty in getting electricity on farms because of the sparse population in rural areas. Regarding roads, the major concern was with paving so that the roads would be passable throughout the year and with keeping the roads open during winter time. Several aspects of the rural school system were mentioned as sources of disadvantages in rural living. Respondents thought that rural schools should be made larger to accommodate more grades, school bus services improved, and teachers paid higher salaries in an effort to improve the staff. The distance from many farmsteads to shipping points, markets, retail stores and churches was mentioned as another disadvantage. (115 respondents).

In addition to the conditions relating to community facilities, several aspects of rural home facilities were also referred to by ten respondents. One was the lack of running water in many farm homes. Another was the fact that even though the community did have power facilities, many of the farmsteads were too far from the road for the individual to be able to carry the cost of installing it.

3. **Lack of social activities in rural areas.** A small number of respondents mentioned the lack of social activities, arising chiefly from sparseness of population, as a disadvantage. This was expressed in terms such as "there are no people around to associate with", "there is a lack of social life for young married people in rural areas", and "rural people are too isolated". (Nine respondents).

4. **Various other factors were mentioned as disadvantages.** Winter hardships (other than those arising from impassable roads) were mentioned most frequently; and reference was also made to other unfavorable environmental conditions. (48 respondents).

Community Facilities and Opinions on Community Changes.—"A rural community consists of the social interaction of people and their institutions in the local area in which they live on dispersed farmsteads and in a hamlet or village which forms the center of their activities".[1] According to this definition, the area included in what is referred to as a community has no defined boundaries. The area thought of an "my community" by the respondents may therefore be in more than one lot, and hence the information on community conditions obtained in the survey may relate to areas outside the sample lots. Data were obtained from the respondents as to the approximate area which they referred to as their community; the specific question asked was "Would you give me an idea of the area included in your community in terms of the distance in miles from your home to the boundaries of the community". Most of them (274) indicated their community area in terms of the distance they lived from its boundaries, and the average area was one with a radius of about three (2.7) miles.[2] The distribution of community size by number of respondents was as follows (one respondent did not answer the question).

Radius in miles	*Number of respondents*
2 miles or less	119
2.1 to 4 miles	111
More than 4 miles	57

Table 1 indicates the average distance and range in miles from the survey farms to the commonly used community facilities. On the average, the respondents lives less than a mile from a gravel road and about three miles from a paved road. A total of 223, or about 90 per cent, resided within one mile of a gravel road and 67 (23 per cent) lived less than a mile from a paved road. Similarly, 251 of the families lived within two miles of a rural school.

Table 1.—Distance from Farm Homes to Selected Community Facilities, Prince Edward Island Study, 1959

Facility	Distance in miles	
	Average	Range
Gravel road	0[a]	0 — 3
Paved road	3	0 — 12
Elementary school	1	1 — 12
High school (Grade XII)	10	0 — 43
Community hall	3	0 — 13
Church	3	0 — 11
Shopping center	3	0 — 30
Railroad station	4	0 — 15
Public library	8	0 — 26
Medical doctor	7	0 — 26
Dentist	11	0 — 30
Hospital	13	0 — 35
Veterinarian	15	0 — 35
Agricultural representative	30	4 — 95
Illustration station	23	0 — 90
Experimental farm	42	5 — 100

[a] A zero in these data indicates a distance of less than one mile.

In addition to the facilities already indicated, 153 of the farm homes visited had electric lighting and 96 had telephones. By area, the farms with these two facilities were distributed as shown in Table 2. A higher proportion of the homes in area I (the area of highest farm income) than of the homes in other areas had electricity, but this area also had the smallest proportion of homes with a telephone. Generally, the proportions of homes having electricity and telephone are much lower than the proportions in some other areas of Canada. For example, in the "Special Study of Ontario Farm Homes and Homemakers, 1959",[1] 99 per cent of the homes in the sample of 352 Ontario farm homes had electricity and 94 per cent had a telephone.

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[1] Dwight Sanderson, *The Rural Community, The Natural History of a Sociological Group*, published by Ginnaand Company, Boston, Mass., 1932, page 481.

[2] In the *Special Study of Ontario Farm Homes and Homemakers, 1959*, the 352 respondents considered their community to be an area with a radius of about three miles.

The opinions regarding the advantages and disadvantages of living in rural areas indicated that the respondents in the 1959 Prince Edward Island survey emphasized the conditions and availability of various types of facilities. This concern is also evident in the opinions expressed on conditions in the respondents' communities. A total of 139 respondents said their community had become a more satisfying place to live in since 1941 or since they started to operate their farms, and 81 of these respondents said that the introduction of modern facilities into their community was one of the reasons for the change. The facilities referred to were as follows:

electricity — 61 respondents
roads — 46 "
schools — 11 "
telephone — 8 "
shopping centers — 3 "
marketing facilities — 3 "
rural mail — 2 "
new church — 1 "

Table 2.—Distribution of Farms with Electricity and Telephone, by Area, Prince Edward Island Study, 1959

	Number of farms studied	Farms with electricity		Farms with telephone	
		Number	Per cent	Number	Per cent
Area I	93	57	61	26	28
Area II	96	40	42	31	32
Area III	66	37	56	23	35
Area IV	33	19	57	16	48
Total	**288**	**153**	**53**	**96**	**33**

Social life and co-operation among rural residents were other community aspects that had shown some improvement (in the opinion of the respondents). Eleven respondents said that their community now had more people and, consequently, they had more "neighbors and friends". Ten farmers referred to the apparent increase in co-operation among rural people. In most cases co-operation was described in general terms, such as "people have been more helpful", or "everybody co-operates more". But it was also mentioned that there was an increase in the practice of cutting machinery costs by sharing equipment.

A number of respondents indicated that their community had become a more satisfying place to live as a result of improvements pertaining to conditions on farms. Twenty-three farmers referred to the fact that their incomes had increased over time; "we are more prosperous now", "we now enjoy a higher standard (level) of living", "we have greater security now than previously". Improvements in farm machinery, crops, livestock, and farm practices were also mentioned; 26 respondents referred to the more modern and improved machinery now available, and 16 said that farmers generally were now able to produce better crops and livestock, as a result of technical advances. Seventeen respondents opined that the improvements in farm and home conveniences generally had contributed toward more satisfying community conditions.

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[1] A co-operative study by the Ontario and Canada Department of Agriculture, Progress Report No. 1, December 1959, page 15.

As previously indicated, 139 of the respondents thought life in their community had become more satisfying since 1941 or since they started to operate their farms. Of the remaining 149, 67 said that additional advantages offset the additional disadvantages and hence there was no change in their communities, and 82 said that conditions had become less satisfying. The reasons for this opinion were of three general types.

1. **Decrease in population in the community.** The movement of people out of the community was commonly referred to in terms of the effects that it had in the area. "We can't live and prosper without neighbors", "many people have left and abandoned their farms", "we have no more young people in the community", were some of the comments. Several respondents deplored the disappearance of organized groups in their communities, resulting from the movement of people out of the area. Moreover, in some districts many of the residents had become engaged primarily in non-farm work, and some of the people who had previously farmed were now retired. The subsequent decline in farming activity in the community was considered as an adverse effect. (53 respondents).

2. **Economic aspects of farming as an occupation.** Because of the relatively higher increase in the cash costs of farming as compared to product prices, it was becoming more difficult to obtain an adequate income from farming. Consequently, there now were more farm buildings in poor repair and more farmers in debt. Some farmers suggested means by which the low income problem might be overcome; they opined that "farms are too small to make a good living under present conditions", or that "farmers have too much invested in machinery in comparison to their returns" . . . . Three farmers referred to the difficulty in obtaining farm labor; either there were no people in the community available for hire or else it was a matter of people not wanting to be employed at farm work. (23 respondents).

3. **General decline in community facilities and endeavors.** Some farmers spoke of the general decline in farming in some areas, the difficulty in keeping up schools and churches because of the smaller number of taxpayers as a result of people moving away, and of the discontinuance of bus and train service in some communities. Other districts had been left without a community hall or a resident medical doctor. The small proportion of young people in some communities had brought about a stalemate in conditions in the area. (Nine operators).

Movement of Young People Out of Communities.—In giving their opinions on why life in their communities had become more or less satisfying, the respondents made reference to the movement of people out of their area. They indicated that both young people and already established farmers were leaving the rural communities. The movement of young people was described in various ways. Some merely stated that "young people are leaving their farm homes"; others said in a general way that all, most, some or none of them were leaving. A total of 247 operators said that young people were moving out of their communities.

The distribution of the respondents, by area and according to their comments on the movement of young people is shown in Table 3. A total of 30 operators (10 per cent) said there was no movement of young people out of their community, and 26 of these resided in areas I and II. Sixteen respondents (all in areas I and II) thought that farming conditions in their communities, i.e. general prosperity and adequate facilities and services, were an inducement to stay. One of these farmers also thought that the young people were hoping to inherit the parents' farm some day, and another that parents helped their children get started in farming.

Three respondents said that, although not moving out of rural areas, the young people were shifting into non-farm work available in their areas. Three others mentioned the movement back to the farm of young people who had left for other areas and jobs at some time in the past, and two said that the operators in their communities were too young to have children old enough to move away. Other factors (each mentioned by one operator) were: (1) "young people enjoy farming and being independent"; (2) interest in farming had increased due to the work of 4-H clubs and other activities; and (3) the children expected to inherit the parents' farms.

Table 3.—Operators Indicating Movement of Young People from Their Communities, Number and Per Cent by Area and Type of Response, Prince Edward Island Study, 1959

	Number of farms	Young people are leaving	All or most young people are leaving	Some are leaving, of movement is normal	No movement of young people	% response
			—number of operators—			
Area I	93					
Number		10	34	31	15	3
Per cent		11	37	33	16	3
Area II	96					
Number		39	27	18	11	1
Per cent		41	28	19	11	1
Area III	66					
Number		26	21	12	1	6
Per cent		39	32	18	2	9
Area IV	33					
Number		1	21	7	3	1
Per cent		3	64	21	9	3
Total	288					
Number		76	103	68	30	11
Per cent		26	36	24	10	4

A total of 223 operators gave what they thought were the reasons for the movement of young people out of their communities. In general, these opinions may be grouped into (1) those relating to conditions on farms or in agriculture, and (2) those referring to living and working conditions in other sectors of the economy. The specific reasons indicated may be summarized as follows.

1. **Low and uncertain income on farms.** Most of the respondents thought that the opportunity for higher and more certain income in nonfarm work was the major factor in the movement of rural youth out of their communities. Reference was made to the "low income of farmers", "the uncertainty of farm income", and "parents cannot afford to give their children enough money to

spend". Ten respondents suggested that the possibility of drawing unemployment insurance during a lay-off was an inducement for young people to move out of the area and into non-agricultural pursuits. (172 respondents).

2. **Better working conditions in other sectors of the economy.** This was expressed in terms such as "shorter hours of work", "better working conditions", and "easier work" in nonfarm jobs. (24 respondents).

3. **Lack of adequate capital to start farming.** This was expressed in terms such as "parents do not have the capital to get their sons started in farming", and "the cost of machinery and other items needed to start farming is too high". In the opinion of some respondents, the young people were induced to leave their communities, either by the lack of adequate capital to start farming or by the apparently more favorable income and employment conditions of their acquaintances who had already moved out of the area. (23 respondents).

4. **Other unfavorable farming conditions contributing to the movement of young people.** Various other aspects of farming which induced young people to move were referred to by the respondents. One was the fact that farms were not large enough to give all farm children an adequate income. Several respondents thought the poor farming conditions peculiar to their area were a major cause of the movement, and others considered that farming conditions in general did not encourage young people to stay on farms. (18 respondents).

5. **Lack of interest in farming.** "Young people just don't like farming or are not interested in it", and "the young people are interested in traveling and seeing more of the country" were some of the expressions used to indicate the lack of interest of rural youth in farming. (14 respondents).

6. **Better living conditions in urban areas.** Some people said that "more entertainment" and more of the modern home conveniences were available to urban residents than to people in rural areas. (12 respondents).

Table 4.—Operator's Opinions on Why Young People Leave their Community, Per cent of Operators by Type of Response and Area, Prince Edward Island Study, 1959

	Respondent indicating a movement of young people	Type of response						
		Conditions of low and uncertain income in farming	Better working conditions in nonfarm occupations	Lack of adequate capital to start farming	Other unfavorable farming conditions	Lack of interest in farming	Better living conditions in urban areas	No opinion
	—number—	—per cent of operators indicating movement—						
Area I....	75	61	12	11	5	5	4	16
Area II...	84	81	11	10	8	6	8	8
Area III..	59	76	3	10	7	7	....	5
Area IV...	29	73	14	3	10	3	7	7
Total...	**247**	**70**	**10**	**9**	**7**	**6**	**5**	**10**

A summary of the opinions given by the respondents on why young people are moving out of rural communities is given in Table 4. In general, the major reasons for the movement (in the opinion of the respondents) were associated with economic conditions in farming—low and uncertain income, lack of capital to start farming, and others. The "pull" effect of better working and living conditions in other sectors of the economy was referred to by a fairly small proportion of the respondents.

(To be continued)

THE NATIONAL PRODUCTIVITY COUNCIL—WHAT IS IT DOING?

The task of the N.P.C. is to galvanize a unified national effort to raise the productive efficiency of all our industries and services.

In a statement given at a Press Conference, in Ottawa, on September 26, 1961, Mr. H. George De Young, Chairman of the Council, told his fellow-Canadians that the chief functions of the Council will be:

(*a*) to co-ordinate and accelerate all efforts made to increase productivity. To this end, the Council will co-operate with provincial productivity councils or committees, organized labor, universities and other educational organizations, and other local or national groups or organizations,

(*b*) to encourage new activities concerned with the improvement of production and distribution methods, more effective research work and use of research findings in industry, the development of better human and industrial relations, the wider application of progressive management practices, and the increase in the skill of our work force.

The Council is now sponsoring five major projects, namely:

1. **Research.**—A Research Committee that will help find better means of disseminating research information to industry. This committee will also work to foster the undertaking of more industrial research work in Canada, particularly for the benefit of small businesses.

2. **Labor-Management Co-operation.**—The Council will enlist the co-operation of organized labor, management, and the Canada Department of Labour, to organize "on the job" labor-management committees. Committees are being formed to deal with production, safety and other problems which are outside the area of collective bargaining.

3. **Training and Re-training.**—The Council is implementing a program to stimulate the training and re-training of the labor force, with governmental assistance. The purpose of this program is to facilitate the orderly transition of workers displaced through market shifts, product replacement, technical changes, or other economic developments.

4. **Provincial and Regional Councils or Committees.**—These councils or committees are established, with the support of provincial governments, to work in co-operation with the national Council and acquaint that Council with productivity problems within provinces. The provincial committees will be supported by local area committees.

5. **Work Study and Method Improvement.**—A committee has prepared a program to help all types of business and industry to utilize all their resources in the most effective manner possible.

In Mr. De Young's words, the "implementation of these programs will assist the Canadian economy in the fuller utilization of Canada's resources, human and material, and in fostering increased job opportunities."

PUBLICATIONS OF THE ECONOMICS DIVISION

Cattle Ranching in the Interior of British Columbia, 1958-59. Acton, B. K. and E. D. Woodward. Ottawa. April 1961. pp. 43.

A report chiefly concerned with ranch practices, such as the use of grazing, cropping and breeding practices, and irrigation, as well as the management of full-time and other types of ranches and their income and liabilities.

Study of Problems in Water Allocation in the Prairie Provinces. Ottawa. July 1961. Report No. 1. Boan, John. *The Economic Significance of Water Requirements Relative to Human Activities and Needs in the Saskatchewan River Basin.* pp. iii + 52. Report No. 2. Boan, John and Craig Duncan. *Physical Features of the Saskatchewan River Basin.* pp. ii + 56. Report No. 3. *Annotated Bibliography of Selected Documents Pertaining to Water Allocation and Utilization in the Saskatchewan River Basin.* pp. ii + 82.

All three reports were prepared in co-operation with the Prairie Farm Rehabilitation Administration. Report No. 1 is chiefly concerned with the economic problems of water allocation and reviews and discusses the geographical and historical settings, water supply in relation to present and prospective requirements, and the methods to be followed in the economic analysis of river basin water development.

Report No. 2 is concerned with the climate, and physiography of the Saskatchewan river basin, and the hydrologic characteristics of the Saskatchewan river and its tributaries.

Seasonal Variations in the Livestock Industry: Cattle, Sheep, Hogs, and Calves. Darcovich, W. and R. Berthiaume. Ottawa. July 1961. pp. 36.

An analysis of some indexes of seasonal variation in the production and prices of live animals and some of their end-products and of the seasonal patterns of storage stocks and of the retail prices of meat. Graphs are used to illustrate and simplify the information given in text and tables.

Co-operation in Canada, 1960. Heighton, V. A., Ottawa. September 1961. pp. 17.

The twenty-ninth annual summary of co-operative activities in Canada.

In addition to the usual type of information on activities, the 1961 reports notes:

(*a*) a continued expansion "with enthusiastic vigor in 1960", the development of co-operatives in urban areas, and the growing interest in co-operation among trade unionists,

(*b*) the construction by Federated Co-operatives, wholesale distributors for Manitoba and Saskatchewan, of a new warehouse that will cost over one million dollars,

(*c*) the announcement by the Hon. Alvin Hamilton, Minister of Agriculture, in April 1961, that the federal government was giving full consideration to the enactment of federal legislation for the incorporation of co-operatives,

(*d*) the holding of the first national co-operative insurance conference at St. Adele, P.Q. This conference was jointly sponsored by Le Conseil Canadien de la Coopération and the Co-operative Union of Canada.

Federal Agricultural Legislation in Canada—1960 Supplement. Ottawa. September 1961. pp. i + 117-123.

A summary of agricultural legislation passed during the January 14-August 10, 1960 session of the Parliament of Canada.

Directory of Farmers' Organizations and Marketing Boards in Canada, 1961. Ottawa. September 1961. pp. 30.

This seventh annual edition of the Directory lists the names of national, regional and provincial farmers' organizations, as well as those of federal and provincial marketing boards.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

Sold in Canada by the Queen's Printer, Ottawa.

Fish, the Great Potential Food Supply. Finn, D. B. FAO. Rome. 1960. pp. iii + 47.

Dr. Finn, Director of the Fisheries Division of FAO, draws attention to the increasing world catch of fish and discusses the problems which nevertheless hinder and hamper fish production. He gives some examples of the work done in fisheries and of the progress achieved and ends his report with a review of the possibilities for increasing the supply of fish.

Technical Conversion Factors for Agricultural Commodities. FAO. Rome. 1960. pp. vii + 346.

A handbook especially designed for agronomists and agricultural economists and statisticians. It contains information on conversion factors for capacity measures and measures such as bunches, barrels, boxes, etc., as well as various technical coefficients and conversion factors such as extraction rates, seeding rates, carcass weight of livestock, fat content, livestock units, and feed units.

World Economic Survey, 1960. Department of Economic and Social Affairs. New York. 1961. pp. xi + 237.

The thirteenth in a series of comprehensive reviews of world economic conditions and the sixth, in that series, to deal with a particular problem in the field of economic development.

The Introduction considers the 1960 economic slowdown within the broader perspective of economic growth and stability and relates the latter to the question of the adequacy of saving. Part I examines the problem of saving for economic growth in the industrial countries, economic development in the underdeveloped countries, and economic development in the centrally planned economies.

Part II reviews current economic developments in industrial and primary exporting countries, and in centrally planned economies.

Yearbook of National Accounts Statistics, 1960. Statistical Office of the U.N., Department of Economic and Social Affairs. New York. 1961. pp. xxiv + 284.

The fourth issue of the U.N. Yearbook on National Accounts Statistics.

Part A explains the conceptual framework and Part B defines the items listed in the *Standard Tables*. Part C gives detailed national accounts estimates, in the *Country Tables*, for 69 countries, and Part D, *International Tables*, contains time series, generally for the 1950-59 period, of the principal economic aggregates and their relationships, the average annual rates of growth of real gross domestic product and its components, the distribution of G.D.P. by type of expenditure and industrial origin, the distribution of national income and components of household income, and the financing of gross domestic capital formation.

Commodity Survey, 1960. New York. 1961. pp. xi + 240.

The fourth in a series of current analyses prepared for the Commission on International Commodity Trade by the Division of General Economic Research and Policies of the U.N. Secretariat.

Chapter 1 deals with the world community situation—the changes in prices, consumption, production, international trade in commodity stocks, and the emergence of imbalances between the potential output of currently available productive capacity and the aggregate effective demand.

Chapter 2 supplies an analysis of the most important factors affecting the market for each of the principal commodities moving in world trade.

The World Sugar Economy in Figures, 1880-1959. FAO. Rome. 1961. pp. 137.

This volume presents "the basic statistics on the world sugar industry since it assumed its modern technological form." These statistics relate to production, trade, consumption, stocks, and prices.

Sampling Methods and Censuses. Volume I, Collecting Data and Tabulation. FAO. Rome. 1961. pp. III + 154.

This volume deals with the use of sampling methods in the data collection and tabulation stages of census work. The contents may be summarily described by a listing of the chapter headings: *Sampling Methods and Censuses: Sample Census or a Complete Enumeration Census; Some Comments on Sample Censuses; Auxiliary Sample Censuses; Broadening the Scope of Census Programs; Change Surveys; The Use of Sampling Methods in Tabulation; Adjusting Sample Results; Sampling Errors; and Concluding Remarks.*

Monthly Bulletin of Agricultural Economics and Statistics. FAO., Rome.

Volume 10, No. 4, April 1961 contains an article by U. Ewals on *Recent Changes in the Competitive Position of Feed Grains.* As the author reminds us, in a footnote, this "article forms part of the studies on grain utilization being undertaken by the Group on Grains of the FAO Committee on Commodity Problems. The air of the studies is to deduce, on the basis of available statistical and other information, the trends in grain utilization and to discover what factors determine these trends, thus providing a basis for governmental decisions on grain policies."

This issue of the Bulletin also contains, as other previous issues, Commodity Notes and Statistical Tables. Volume 10, No. 5, May 1961 only contains Commodity Notes and Statistical Tables.

OTHER PUBLICATIONS

Colonization and Settlement in the Americas, A Selected Bibliography. Bibliographical Series No. 25. Geographical Branch, Department of Mines and Technical Surveys. Ottawa. 1960. pp. 68. Available from the Queen's Printer. Price: 50 cents.

Mr. N. L. Nicholson, Director of the Geographical Branch tells us in the Preface that "The Geographical Branch has long been associated with the activities of the commission on Geography of the Pan-American Institute of Geography and History. One of the commission's principal interests is the Committee on Colonization and Settlement, for which the Branch provided the Chairman from 1950 to 1954. One of the first tasks of this Committee was the compilation of a bibliography of contemporary studies on the subject."

A preliminary compilation made in 1952 is no longer available but, as the demand continued strong, Dr. S. C. Wiley compiled the new bibliography to meet this demand and to bring the work up to date.

The Demand, Supply and Price Structures for Hogs, Canada. Marshall, R. G. and P. L. Beerstecher. Department of Agricultural Economics, Ontario Agricultural College, Guelph, Ontario. August 1960. pp. 34.

A study of varitions in hog prices and production from year to year and an analysis of "the major factors which influence the prices received by farmers at the farm level." A series of 21 graphs makes for a quick and easy understanding of the interpretation of the data.

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